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ABSTRACT

This document describes "Project Open," a curriculum development services agreement between the Wetzel County Board of Education and the West Virginia University Board of Regents, to be implemented in two county high schools. This agreement is designed to provide the school system with a planned educational curriculum and personnel development program in the technologies. The purpose of "Project Open" is to provide opportunities for young people to understand the highly complex technological world in which they live, and thus focuses on the industrial arts. The document is divided into two parts, each of which relates to one of the high schools involved. Both of these parts are divided into six sections. Section one discusses the nature of the project in relation to the community, the school system, the teachers, and the students. The purpose of the project is set forth in section two; this section includes long- and short-range objectives, student and community needs, and a list of course descriptions. The third section describes inservice training, course design and implementation, physical facility modification, and industrial arts club activities. Section four is comprised of internal and external evaluation reports by the principal, teachers, consultants, the state curriculum development specialist, the field coordinator, and the field liaison. Future progress is discussed in section five, and section six (the appendix) includes the contract agreement and course content charts. (BD)

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U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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EDUCATION

PROGRESS REPORT

PROJECT OPEN - WETZEL COUNTY 1974 - 1975

SECTION I .... HUNDRED HIGH SCHOOL

SECTION II .... PADEN CITY HIGH SCHOOL

CONSULTANTS:
John R. Wright - Hundred
Frank R. Trocki - Paden City

FIELD COORDINATOR:
Dr. David McCrory - W.V.U.

SUPERINTENDENT:
Jack Dulaney - Wetzel County

1974-75 Progress Report

for

Project Open

at

Hundred High School
Wetzel County, West Virginia

June, 1975

Submitted by

John R. Wright
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College of Human Resources and Education
West Virginia University

Table of Contents

I. Nature of the Project....................4

- A. The Community....................4
- B. The School System....................5
- C. The Teachers....................6
- D. The Students....................6

II. Purpose of the Project....................7

- A. Community and Student needs....................7
- B. Short Range Objectives....................8
- C. Long Range Objectives....................9
- D. County Coordinated Curriculum....................10
- E. County Rationales, goals and objectives for:

  1. Communication....................11
  2. Production....................11
  3. Transportation....................12

- F. List of 1974-75 Course Description....................13

III. Major Accomplishments....................14

- A. Inservice Training....................14
- B. Course Design and Implementation....................16
- C. Physical Facility Modification....................17
- D. Industrial Arts Club Activities....................18

VI. Evaluation....................18

- A. Internal

  1. Principal's Report....................19
  2. Teacher's Reports....................20
  3. Consultant's Report....................22
  4. Student Sign-up....................23

- B. External

  1. State Curriculum Development Specialist's Report....................25
  2. Field Coordinator's Report....................28
  3. Field Liaison's Report....................30

V. Future Progress....................32

- A. 1975-76 Course Descriptions....................32
- B. Expansion to Valley and Magnolia....................32
- C. County wide inservice....................33
- D. Withdrawing the Consultant at Hundred and shifting reponsibility - Diffusion of Innovation....................34

VI. Appendix

A. Contract..36
B. Course Content Charts.......................................41
C. P.E.R.T...60

I. Nature of the Project:

"Project Open" is a curriculum development services agreement between the Wetzel County Board of Education and the West Virginia University Board of Regents. (see appendix 1)

The Curriculum Development Agreement is designed to provide the school system with a planned educational curriculum and personnel development program in the technologies. The agreement is designed on a cooperative basis with the county to meet designated instructional and programmatic needs of the county.

The University, through the Training Program for Teachers in the Technologies, provides the county with consultant services for curriculum development in industrial arts at Hundred High School. John R. Wright, a training associate at the Technology Teacher Center, is assigned to the project. He is backed up in human resources by 19 other Training Associates and six university staff members. Also available to the consultant, is a Technology Education Resource Center with material references and reproduction facilities.

A. The Community:

The Town of Hundred, West Virginia is located in Wetzel County just south of the southwest corner of Pennsylvania. It is a quiet little town with a small business center nestled in a rural setting of the Appalachian Mountains. Its major industries are coal and natural gas. The high school is located just outside the business district on West Virginia Route 202. The school serves Clay, Church and Center Districts in Wetzel County. The school community is largely rural with only two incorporated towns; Littleton, with a population of 260 and Hundred, with a population of 445. The population of Clay, Church and Center Districts is approximately 1500. The school also serves the communities of Burton and Wileyville.

B. The School System:

Hundred High School is one of four High Schools which services all of the secondary educational needs in Wetzel County. Originally, the school was named Church District High School. The present building was built in 1923. The older part of the building is constructed of red brick. The addition, housing the shop, library, vocational-agriculture room and the band room, is built from cement blocks.

In 1958, a new gymnasium was built, which took the place of the old gymnasium inside the school. Later, the old gymnasium was divided into classrooms and a cafeteria.

Hundred and Little High Schools were consolidated in 1945. The students from Littleton were brought to Hundred and the name Hundred High School was retained as the name of the newly consolidated school. Hundred High School is rated as a first-class high school by the State Department of Education and has been a member of the North Central Association of College and Secondary Schools since 1931.

The present system of secondary education houses all 7-12 grade students in Hundred High, Valley High, Paden City High or Magnolia High, depending upon locations of residence.

The Wetzel County Administrative Staff under the direction of Jack Dulaney, Superintendent, is composed of an Assistant Superintendent, Elementary Education Supervisor, Secondary Education Supervisor, Transportation Director, Kindergarten Supervisor, Director of Federal Programs and a Business Agent. The Superintendent is responsible for the assignment of all school personnel and formulating a program of supervision for the schools.

The Director of Secondary Education is in charge of developing programs in instruction in each school and developing methods, devices, and techniques of teaching. It has been county policy to have the principal responsible for supervision of instruction in his building. The Director of Secondary Education is available to aid teachers if a problem should arise. All four high schools have assigned a principal and assistant principal except Hundred High, which (because of school population) has only a principal.

All high schools except Paden City (which has a special arrangement with Tyler County) receive their students from local community based elementary schools. There is not an industrial arts or technology education program at the elementary level.

C. The Teachers:

The industrial arts teachers at Hundred High School are certified industrial arts teachers with experienced backgrounds.

Loy Stull graduated from Fairmont State College in 1968 with a B.S. Ed. and M.S. Ed. in Industrial Arts. Loy has been teaching at Hundred for 7 years. His major area of interest is in Production Technology. He has several years of experience in the house construction industry.

Roy Brasher graduated from Fairmont State College in 1971 with a B.S. Ed. in Industrial Arts, and is presently working on a M.S. Ed. from West Virginia University in Technology Education. He started full time teaching at Hundred in 1973. His major areas of interest are Communications and Production Technology. Roy has over fifteen years of experience in the Printing Industry.

D. The Students:

The students at Hundred High are friendly rural people. They are very practical in their approach to life, and seem to be very interested in the technological world in which they live. Variety in course offering has been limited in the past to a general shop, welding, small engines, sewing and cooking in the practical arts areas. Through the efforts of "Project Open", new horizons are being opened to the toal student population at Hundred. The response has been most rewarding.

II. Purpose of the Project:

The purpose of "Project Open" is to open up opportunities for young people to understand the highly complex technological world in which we live. Focusing attention on industrial arts, the curriculum is being updated and tested in an effort to service the needs of the community and its students.

The results of the updating and testing are to be organized into a relevant "living curriculum" in industrial arts for county wide adoption.

The project also serves a second need for Wetzel County. The information gathered together through the curriculum development efforts at Hundred will be of great value when a new set of middle schools are completed. The improvements being made today are a worth-while investment for tomorrow. The adoption of a unified curriculum plan will assure equal and quality education for all the students in Wetzel County.

A. Community and Student Needs:

The community of Hundred if surrounded by larger towns and cities. Most of the necessary services can be found in Hundred, but special or emergency services must be summoned from an outside source.

The Columbia Gas Company, the largest single employer, provides on-the-job training, and some students begin this training by working for the company part-time in the summers. The coal mines, located outside of Hundred, also provide on-the-job training.

With the exception of extra-curriculuar activities provided by Hundred High School, students in the community seldom travel outside the immediate area. The opportunity to see different styles of living or the various types of work are very limited at best.

What is needed for the students at Hundred High is a life awareness program - that is, a program designed to prepare the students to live in a technological world. Both the community and the students need to understand our society and its advancing technology. Programs need to reflect the real world and project into the world of tomorrow.

Project Open has begun the process of opening up the vast horizon of a technically complex world. Ten pilot courses have been offered for 1975/76 deal with the basic needs of people and update practices which have become obsolete over the years. The pilots give youngsters a fresh view of the world outside of the Hundred Community.

B. Short Range Objectives:

The immediate objectives are concerned with updating the industrial arts curriculum to reflect the industrialized society in which we live. The development of pilot courses based on learning concepts derived from industry and technology are tested, revised and re-tested over a three year period in an effort to compile a living and relevant curriculum guide for county wide implementation.

In the process of developing the new curriculum, inservice training is provided to Roy Brasher and Loy Stull which is designed to keep them involved and active in course revision. The results will allow them to continue updating curriculum after the consultant has completed the initial work.

Physical facilities are also revised to allow new activities to be introduced. New activities reinforce the concepts being taught in the newly developed laboratories.

All short range objectives for the 1974-75 school year have been met or surpassed. The identified objectives were:

1. Modify a classroom to serve the needs of a graphic communications course.

2. Set up a drawing room next to the communications area for planning purposes.

3. Conduct one hour each week of inservice training for each teacher to identify and solve problems related to the curriculum change.

4. Develop rationales, goals and objectives for 1974-75 pilot courses.

5. Order the necessary supplies and equipment to insure the success of all pilot courses.

6. Begin to shift responsibilities presently held by the consultant to the teachers.

7. Work with the Paden City group in inservice training to help provide an understanding of the curriculum change process.

8. Participate in county wide inservice sessions to develop overall rationales, goals and objectives on:
    a. Transportation
    b. Production
    c. Communications

9. Develop a P.E.R.T. (Program Evaluation Review Technique) for the school year.

10. Work with Frank Trocki, Paden City consultant, to help coordinate the county curriculum effort.

C. Long Range Objectives:

The long range objectives are designed to further update industrial arts to reflect technology and its relationship to man and his society.

Courses which are developed at Hundred have two major thrusts. The first phase updates courses to present day practices. The second phase reflects the technology in the real world of today and tomorrow. They also concern the human as well as the mechanical aspect of the technologies.

Project Open has completed phase I and II in eight areas this year. Phase III will be applied this year to those courses and a new Phase I effort will be involved with some aspect of revision and change during the 1975-76 school year.

The following identified long range objectives are being met by Project Open at Hundred High School:

1. To design, implement and evaluate an overall industrial arts curriculum which will prepare students at Hundred High School with the necessary tools to understand, utilize and contribute to our technological society in which they live.
2. To review and revise content and structure of industrial arts courses offered at Hundred High School.
3. To provide resources needed to design and implement a coordinated and updated curriculum.
4. To design and implement a model for curriculum development consultation and to evaluate its effectiveness.
5. To make Hundred High School self-supportive in curriculum development and implementation in three years.
6. To offer more options at less cost in industrial arts.
7. To provide inservice training to staff at Hundred High in curriculum revision and implementation of that curriculum, i.e., course outlines, activities, materials and supplies, resource use, plant facilities and teaching methods.
8. To package and print an overall curriculum outline for Hundred.

D. County Coordinated Curriculum:

The county, in an effort to improve industrial arts to help meet the needs of its students, has several expectations and requirements.

A.) In an effort to determine needs and solutions, pilot courses are being implemented and evaluated at Hundred High and Paden City High for a three year period. B.) Starting this year, another set of pilot courses will be implemented and evaluated at Valley High and Magnolia High.

In the process of teaching new industrial arts courses, many improvements are being made; A.) Physical facilities are being updated and expanded, B.) Teachers are involved in an organized inservice program in curriculum, C.) Students are receiving relevant instruction, and D.) the county is developing a coordinated curriculum and a battery of information which will result in better facility planning and use in the future building programs.

All consultants will develop a written curriculum guide during the next three year period. The consultants will be coordinated at the University level by Dr. David L. McCrory, Director of Field Services, and at the county level by Jack Dulaney, Superintendent of Schools.

E. County Rationales, goals and objectives for:

Communications

Rationale:

We believe that Wetzel County is a microcosm of the world at large; that its student's need for communication skills is comparable to that of any community, whether large or small; that a knowledge of the technical aspects of communication systems will lead to an understanding of the roles of the media in a technological society; and that the teacher, as a manager, provide the student with both simulated and authentic experience in the skills and techniques of communication. It is through these experiences that the student will become a discerning member of society.

Production

Rationale:

We believe that production is the basis for man's survival. With this in mind, it is important for us to give the students an awareness of the technical, social, cultural, economical, organizational and ecological aspects of production; so they will understand the affects of production in our technological society. The teachers should provide authenic and simulated experiences in the areas of production. This will bring about insights and realizations of the theory, concepts and skills in the extraction, manufacturing, construction, recycling and services utilized by the production industry. Through these experiences the students should become better consumers of technology and contributing members of society.

Transportation

Rationale:

We believe that the study of transportation is divided into two major areas of concentration:

The first is the investigation and development of the student's awareness to the many types of energy utilized by man, how they are converted into work, and the implications and effects of such conversion upon man and his environment.

The second is an investigation of the various systems of terrestrial, atmospheric, space and marine transportation. These systems related to the movement of man and materials should be explored by students in both synthetic and authentic situations.

Coupled with these two major concepts is the study of future energy and transportation technology which will be encountered by the students during their lives.

Major Objectives for Production, Transportation and Communications

Goals/Objectives:

1. The students will be able to gain an awareness of production, transportation, and communication processes.
2. The student will be able to understand the different techniques used in production, transportation and communication.
3. The student will be able to gain an awareness of the effects of production, transportation, and communications on man and society.
4. The student will be able to gain an understanding of the future roles of production, transportation, and communications in society.
5. The student will be able to understand the history and development of production, transportation and communications.

6. The student will be able to gain specific skills in production, transportation and communications systems.
7. The student will be able to understand mans need and desire to produce, transport and communicate effectively.
8. The student will be able to develop individual values so that he will become a discerning member of a technological society.
9. The student will be able to develop leisure use of his production, transportation and communication skills.
10. The student will be aware of possible career opportunities in the areas of production, transportation and communications.

F. 1974-1975 Course Descriptions:

Craft Industries 5 & 6:

Can give the student a background and experience in working with a variety of materials, while developing basic skills in the related processes used in making craft products. Students study the history of the craft industries and design and construct their projects in the following areas; plastics, leather, wood, candle making, glass cutting, silk screening, blockprinting, jewelry, metal tooling, paper mache, and cardboard construction.

Construction Technology 7:

Will provide basic knowledge and skills related to the construction industry. Students become involved in planning surveying, the testing of soil and concrete, the construction of a small building with all its related plumbing, electrical and heating problems. They complete the year by designing and constructing, in model form, their idea of the future house in the year 2000 A.D.

Manufacturing Technology 8:

Will provide basic knowledge and skills related to the manufacturing industry. Students become involved in design testing and evaluation of prototypes and models in the form of land assault vehicles and rockets. They also form a company, design a product, sell stock for capital, mass produce the product, market the new product, and dissolve the company.

Industrial Careers 9 & 10:

Is a course designed to expose the student to the various occupational opportunities available in the tri-state region along with information related to the necessary preparation for industrial related employment. Students travel on field trips to industrial plants, airports, military bases, technical colleges and other related areas of interest, as well as study the world of work, how to get a job, the interview, labor unions plus other work related concepts. Students are also involved with hands-on activities in a wide variety of areas dealing with a multitude of materials and processes.

Basic Woods Technology 9 & 10:

Is the study of the evolution of wood, from the seed to the finished product. Students cut down, replant, mill and dry the lumber they will use in the design and construction of an innovative project. Basic joinery, preparation and finishing will be a few of the many concepts studied in the use of wood as a material for products.

Graphic Communications 9 & 10:

Is designed to provide basic knowledge and skills in the areas of design, printing, and photography. Students will design and develop products which will require the process of graphic reproduction utilizing the offset method of printing. Individual as well as production methods of printing will be experienced along with the complete processes of photography, block and rubber stamp printing, silk screen and plate making.

Electricity and Electronics 11 & 12:

Will give the student a basic knowledge in the areas of alternating and direct current electricity. Students will also study circuitry and power/load relationships. The second half of the course deals with electronics and the construction of a project such as a radio or communication system (two way radio). Kits and parts must be supplied by the student.

Advanced Materials Technology 11 & 12:

Is the investigation of materials and their characteristics. Students will study the origin of materials such as metals, plastics, textiles, and petrochemical and design models to test, measure or show product flow procedures in a variety of areas. Each student will also construct a project dealing with the material he has investigated.

III. Major Accomplishments:

There have been several major accomplishments at Hundred High School this year. The emphasis has been placed on getting the teachers involved in the construction of curriculum, justification of budget needs and involvement in inservice training at the county level.

A. Inservice Training:

Both Loy Stull and Roy Brasher met with the consultant during the summer months to revise the first four pilot courses and develop an additional four pilot courses for the 74/75 school year.

During the school year the consultant met with each teacher once each week after school as part of the inservice program. Problems and solutions were discussed along with special assignments.

Loy Stull developed a Technology Reference Center to provide the students with ready research material related to the new areas of study. Both the project liaison and the consultant reviewed with Loy Stull all of the selected references included in the Reference Center.

Loy also developed a complete course in drawing/design including a rationale, goals, objectives, content areas, physical facility and equipment needs. This course will be offered during the 1975/76 school year.

To help develop the course, the consultants arranged for paid inservice time for three two hour evening sessions which included the industrial arts teachers at Paden City and Stan Bucholc, a Training Associate from the Teacher Center.

In terms of resources, Loy also participated in a training session on how to use government surplus materials and made one trip to Dunbar where he purchased surplus materials for the program.

Roy Brasher developed a complete graphic communications course including the conversion of a classroom into a darkroom and production area for offset lithography. The conversion was completed by the industrial careers class as part of their course activities.

Roy also participated separately in a training session for government surplus resources. During the school year he met with the consultant each week to problem solve curriculum problems and met separately with Sara Kelly, an English teacher, and began to draft a new course in Communications Technology which will be team taught next year.

In the past year both Roy Brasher and Loy Stull have assumed a greater role in the development of curriculum at Hundred High School. The consultant has assumed the role of problem solving, providing new ideas and reference materials only after both teachers have exhausted their resources. The results of this shift in roles has been very rewarding and worthwhile. As the 1975-76 school year progresses, the consultant will continue to phase himself out of the curriculum project, shifting total responsibility to both teachers.

B. Course Design and Implementation:

Four new courses were designed and implement this year at Hundred High School. Roy Brasher taught graphic communications and basic woods technology and Loy Stull taught advanced materials technology and electricity/electronics.

Roy's graphic communications class began the year in a design/layout problem solving situation using posters as a medium of communication. Most of the class had moved into the photography section of the course by mid-year. Each student was responsible for a photographic essay which incorporated a variety of new skills and techniques for each student. The last half of the year was based around offset lithography and a major production project which resulted in a very professional student handbook for the school. Student interest was extremely high during the year with many students returning after school hours to work on hobby types of projects above and beyond the required course work.

The second course that Roy offered this year was a revision of our standard woodworking course. It failed to materialize as was planned, resulting in a traditional woodworking course. It hoped that we will be able to implement the revised course next year.

Loy's advance materials technology class began the year testing various materials and measuring their differences. Some very innovative testing devices were constructed by the students in their attempt to gather data about materials. Later in the year, each student designed and constructed a useful product or project based on the earlier material he investigated. Student interest was also high in this class of mostly seniors. The consultant noted that the behavior of this group has improved greatly in the past year, and some of the "hard to get seniors" were really turned on in this course.

The second course offered by Loy was electricity/electronics. Because of the high expense involved in this type of course, we borrowed the supplies and basic equipment from the T.E.R.R.C to run the pilot course.

Student interest was very high throughout the year. They developed natural and synthetic power sources, turned it into electricity and finally into work. They constructed motors, generators and other small projects which led to the application of a real problem solving situation. This course was such a success we have decided to invest some funds into various testing and measuring equipment for next year.

C. Physical Facility Modification:

As with all curriculum revision projects, our facilities had to be modified to meet the needs of the new courses. Last year we converted the wood shop into a production area. Our electricity/electronics, advanced materials technology and wood technology courses utilized the production area with little modification.

However, the graphic communications required that we convert on ajoining classroom into a communications laboratory. This resulted in the construction of a darkroom, a divider wall between the layout and production area, and an access door from the production area. Benches were purchased and placed along each wall and the table top A.B. Dick 360 was placed in the middle on a stand. The drawing tables were moved into the room to provide layout space, thus adding another use for the laboratory. The total cost for the new communications facility including all equipment was less than $7,000.00. The facility meets the needs of the Hundred curriculum very well.

D. Industrial Arts Club Activities:

The industrial arts club is advised by Roy Brasher and is made up of mostly seventh and eighth graders.

This year they built a red barn 12' x 12' during the months of January, February, and March during the regular seventh grade construction class. The cost for materials was around $220.00. The club then printed chances and sold over $1,750.00 worth to the community. The profit was used to fly all 21 students and four adults to Washington, D.C. for three days. The group toured the White House, Capital, Smithsonian Institute and met with Senator Byrd. For many students it was the first plane ride and first major trip outside of the Hundred community. This is the second year that the industrial arts club has enjoyed a most successful year.

VI. Evaluation:

As a form of evaluation, letters from various people who have been involved in Project Open are presented in this section.

The internal evaluation letters are provided by those who have worked with the project on a daily basis, and the students who elect the courses. The external evaluation letters are provided by those who have visited the project on a monthly or bi-yearly basis.

TO: David L. McCrery

FROM: Jon Shriver

DATE: June 15, 1975

SUBJECT: Project Open - Hundred - Principal's Progress Report

The second year of "Project Open" at Hundred High School has shown growth in organizational structure and student interest. We have worked toward the goals of intergrating our technology program with our total school program. At this point in time, I believe we are making much progress toward this goal.

The availability of increased instructional materials has allowed our instructors to expand their activities which has resulted in increased student interest. I believe that last years' experience with Project Open has enabled us to better determine realistic objectives for the program.

Although "Project Open" has improved in its second year of operation, we intend to keep adapting and changing the program to fit the needs of the students in Hundred High School. Next year we are going to team up the technology program with the English department. The new class, Communications Technology will be taught by an industrial arts teacher and an English teacher in a true team teaching environment. One main objective of this class will be to show the students how various fields of study are related.

TO: Dr. David L. McCrory

FROM: Loy Stull

DATE: June 16,1975

SUBJECT: Project Open - Hundred - Teacher's Progress Report

During the summer of 1974, John Wright and I revised and evaluated the courses offered at Hundred High School and selected two more for the coming year. This helped me to understand more clearly the process of building and evaluating a curriculum. It also helped me to appreciate the progress that was made during that year.

At the beginning of the 1974-75 school term the physical features of the laboratory also indicated a successful year of Project Open - Hundred. Everyone seemed to be more enthusiastic about the year ahead. A new communications laboratory, new machines, new handtools, and the over-all improvement of the physical features of the shop were contributing factors.

Electricity-Electronics and Advanced Materials Technology were the two new courses that I would be involved with. Both of these courses involved upper classmen and were geared toward more mental activity than courses in the past. They involved a testing and experimental approach. The over-all student participation and involvement was good.

Since the I.A. Department will be getting new drawing equipment next year, I was involved in planning the facility and ordering equipment. This was part of Mr. Wright's plan of cutting down on his involvement and giving me more responsibility. Therefore, at the end of next year, I should be able to assume full responsibility.

This year we have also had several county wide I.A. meetings. These meetings have involved curriculum development. This was the first step toward a better county wide program.

In conclusion I feel that the I.A. department and myself have been enhanced by Project Open. I am looking forward to the coming year.

TO: David L. McCrory

FROM: Roy Brasher

DATE: June 25, 1975

SUBJECT: Project Open Evaluation - 1974-75, Teacher's Report

Student interest in the various new courses being offered through "Project Open" at Hundred High School, has been very good among male and female students alike.

The seventh grade "Construction-Technology" students constructed a utility building which resulted in tremendous community interest and respect for the program. The building was closely examined by most everyone in the community and the student workmenship and accomplishment was highly praised.

The "Basic Woodworking Technology" class was about equally divided between girls and boys. The girls showed keen interest in the class and turned out to be more meticulous in the class and project work.

"Graphic Communications" students developed a discriminating eye for quality printing and photography. Several students became engrossed in the processes and have indicated a desire to persue a career in the graphic arts field. The students achieved a feeling of accomplishment when they completed pieces of printing that were to be used by the school, the county and/or clubs, such as the new students Handbook, graduation programs, etc.

In summary, it is my opinion that "Project Open" has been a great success at Hundred High School this past year, opening up new avenues of learning to the students and teachers alike.

TO: Dr. David L. McCrory

FROM: John R. Wright

DATE: June 19, 1975

SUBJECT: Project Open - Hundred - Consultant's Progress Report

The 1974-1975 school year saw a great deal of growth in the Project Open effort. Both the consultant and teachers were much more adept at curriculum design and implementation causing a much smoother operation and transition.

Courses were designed during the summer of 1974 by both teachers during planned inservice time. Many of the problems experienced during the first year of operation were eliminated and prevented because of the foresight gained during the 1973-74 school year. Supplies were ordered and facilities completed before the 74-75 school year began, also contributing to the overall smoothness of operation.

The teachers now have competencies in designing curriculum and curriculum models, writing behavioral goals and objectives, identifying content and related activities and providing some form of evaluation. They also have had experience in identifying, justifying, and ordering supplies and equipment. Mr. Brasher, in addition to the above, has also participated, organized and supervised a complete physical plant modification in the form of a new Communications laboratory.

In terms of student interest, we again have had to turn some students away because of course load restrictions. We have, however, been able to design our courses to allow a greater number of students in each class. Our growth has increased from 300% to 400% over a two year period,(i.e.: from 54 students in 1973 to 169 in 1974), to sign-up of 211 students in 1975. Again, I feel this response is due to our better organization and improved teacher effectiveness at all levels.

In summary, I feel we have had a good year. The administration has been extremely cooperative and the teachers have assumed a great deal more of the curriculum revision responsibility. I look forward to an even better 1975-76 school year, the withdrawal of the outside change agent and the total acceptance of technology education goals at Hundred High School.

Student Sign-up:

In order to show a perspective and thereby make the enrollment of students in Industrial Arts significant, this report will list two years of enrollment. This will afford the reader a base to compare and evaluate.

TOTAL STUDENTS IN I.A.

(Semester Courses) 1972-73 - 112; one teacher

1973-74 - 145; two teachers
(Full year Courses 1974-75 - 169; two teachers
Project Open) 1975-76 - 202; two teachers

* These figures represent a two year increase of 400 per cent by semesters.

1974-75 BREAKDOWN

GRADE	COURSE	SECTIONS	STUDENTS
7 & 8	Crafts Industries	1	6
9 & 10	Mechanical Drawing	1	18
11 & 12	Industrial Careers	1	12
9 - 12	Basic Woods Technology*	2	35
9 - 12	Graphic Communications*	1	20
10 & 12	Electricity/Electronics*	1	17
11 & 12	Advanced Materials Technology*	1	13
7	Construction Technology	2	27
8	Manufacturing Technology	2	21
	* Pilot Course	12	169

1975-76 BREAKDOWN

GRADE	COURSE	SECTIONS	STUDENTS
7 & 8	Crafts Industries	1	15
9 & 10	Visual Thinking and Illustration*	1	16
11 & 12	Communications Technology*	1	18
9 - 12	Basic Wood Technology	2	36
9 - 12	Graphic Communications	1	20
11 & 12	Electricity/Electronics	1	19
11 & 12	Advanced Materials Technology	1	20
7	Construction Technology	2	26
8	Manufacturing Technology	2	32
	* Pilot Course	12	202

Both the 1973-74 and 1974-75 school years had a sign-up of more students than could be handled by the present staff and facilities. This year we were able to design our courses (activities) to handle more students per class.

By doing so we now are servicing over 2/3 of the entire school in industrial arts.

Students interest in industrial arts is not only evident in the amount of students who wish to get into the various courses but also in performance once admitted. The consultant noted this year that student projects were more sophisticated in a problem solving sense, and that behavioral problems occured less frequently this year. This is a result of "turned on" students, new staff assignments, and better curriculum planning.

Hundred's industrial arts program may be at maximum student load this year because of the size of the school. The future plans call for the seventh and eighth grade to be moved to a new middle school along with one industrial arts staff member. The remaining teacher, Loy Stull, will continue to offer the varied curriculum by offering some of the courses every other year. He will probably service around 100 students, or approximately 65% of the student population.

In conclusion, it is felt that student enrollment is a significant sign of evaluation that should be included in a progress report. If this is the case, Hundred's Project Open effort is doing very well.

TO: Dr. David L. McCrory

FROM: James F. Snyder, Program Specialist, Industrial Arts

DATE: October 2, 1974

SUBJECT: Hundred High School Visitation

On 18, September 1974, I visited with Jon Shriver, Roy Brasher and Loy Stull at Hundred High School.

In conversation with Mr. Shriver, I was informed that the Industrial Arts, Project Open was off to a good start for 1974. He did not express any concerns about the teachers, the students or the program. He did inform me the communications lab was slow in getting equipped and being finished.

Roy Brasher was conducting a beginning woods technology class and seemed to be doing a good job. The class was composed of both boys and girls and numbered eleven (11) girls and seven (7) boys. This fact was exciting to me. While inspecting the communication lab, I observed new items i.e. mixing valve for darkroom, offset press and exposure cabinet. Two students were busy hanging draperies and removing paint from the windows. My observation is that the lab is going to be a tight fit for equipment and eighteen (18) students. Management is going to have to be close by the teacher to operate that class.

Loy Stull was involved with a drafting class in the small room on the second floor. It was difficult to get to Loy with the wall-to-wall student set-up. It appears that the room is much to small for anything let along a drafting class.

Both teachers were of high spirit and seemed to be enjoying their classes.

There is a marked improvement over one year ago. The labs, the teachers attitudes and their enthusiasm is exciting to observe. John Wright is doing a good job in this project.

CC: Dr. Donald Lauda
Dr. Paul W. DeVore
John Wright

State of West Virginia
Department of Education
Charleston
25305

DANIEL B. TAYLOR
STATE SUPERINTENDENT
OF SCHOOLS

MEMORANDUM

TO: John Wright

FROM: James F. Snyder, Curriculum Specialist, Industrial Arts

SUBJECT: Year End Evaluation, Hundred High School, Project Open

DATE: June 24, 1975

The school year 1974-75 has been very productive for Project Open at Hundred High School, Wetzel County.

The progress of the project, thus program of Industrial Arts/Technology, has been very impressive. The Board of Education and the Wetzel County Administration has obviously given total support to the project. This is evident in the expansion of curriculum offerings, expansion of space and the financial committment to date. With continued support it is my opinion that the program at Hundred High School will be a model for other small high schools in West Virginia to view.

The new student handbook, printed and published by the graphics program, is very discriptive and valuable to students for selection of Industrial Arts courses. The handbook identifies the expanded curriculum very well. I feel the handbook is a contribution to the interest and expansion of girls enrolling in these classes.

The improved environment lends to the developing curriculum. The addition of the graphics laboratory and the change of the drafting room location is a definite improvement.

I also feel the presence of a Technology Reference Center in the Industrial laboratory is an inducement to indepth exploration by students.

It is very inspiring to witness the growth of the program at Hundred High School. Much credit must be given to Loy Skull and Roy Brasher for their extended effort to accomplish the goals and objectives they established for the program.

The projected plans for the remaining year of development are very ambitious but not unreal to accomplish. John Wright and the teachers are to be commended for their fine work.

JS/ld

West Virginia
University

MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Industrial Arts Education

November 13, 1974

TO: John Wright
FROM: D. McCrory DZM
RE: Observation of Project Open at Hundred High School

Thanks for providing the opportunity on November 6 for me to visit the Project Open operation at Hundred, West Virginia. I was impressed with the changes in facilities and in instructional program since my last visit.

The room arrangement seems quite functional. I urge you to keep working toward a planning room concept for what is now drafting area. The darkroom adds a much needed dimension, and I was glad to see that Roy's students were already getting into photography. I believe you are aware already of the danger of letting Roy get carried away with photography and printing as a service to the school. The educational purposes could take a back seat if we are not careful.

Loy's classes seem to be coming along. Your work with both seems to be paying off. There is evidence there of improvement in scope of ideas, teaching skills, and motivation. The technology bookshelf will be a welcome addition, but we may have to help both teachers see how to get the best use out of it. It may be that the Ag teacher's techniques may be worth modeling on this point.

As we had discussed on the trip back, I recommend that you continue to "work yourself out of a job" at Hundred. A shift from a nuts-and-bolts supervisory role to that of consultant as idea-man is appropriate now that the momentum is built up. It seems to me you are right on schedule in what could be a textbook example of a consultant-type curriculum development project in our field.

Keep up the good work.

West Virginia
University
MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Technology Education Program

MEMORANDUM

TO: John Wright

FROM: D. McCrory, Coordinator of Field Studies

RE: Project Open Evaluation (Hundred High School)

INFO: Mr. Stull, Mr. Brasher

DATE: May 22, 1975

On Monday, May 19, I visited Hundred High School for the purpose of evaluating the progress of Project Open there. I am pleased to report that I am impressed with the growth I observed in the teachers, the curricular offerings, and the facility.

Mr. Brasher and Mr. Stull seem to be making progress with their new courses, and the students appear to be doing very well. It was especially interesting to note that among the students attracted to the new courses in printing and photography, were several "difficult" senior boys. By reports of the teachers, the students have really "taken" to the new activities and have been good students this year. It seems to me that this effect of the project, if it were the only one, would make the work worthwhile.

Students in the project lab also seemed to be involved in learning activities. It was good to see the results of the students' work throughout the year (i.e.: red barn, technology bookshelf, electric motor demonstrators, clock projects, etc.).

All in all, I congratulate you and the teachers for doing a fine job this year and I wish you well in 1976.

West Virginia University
MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Technology Education Program

June 24, 1975

Mr. John Wright, Consultant
Wetzel County
Technology Ed. Teacher Ctr.
2925 University Avenue
West Virginia University
Morgantown, WV 26506

Dear Mr. Wright:

As liaison person between the Technology Education Program and the project at Hundred High School I am submitting my evaluation of the 1974-75 school year. This evaluation represents my views which are based on personal visits to the school and meeting with you and other persons directly or indirectly involved with Project Opem.

EVALUATION OF 1974-75 SCHOOL YEAR

The program at Hundred High School has undergone drastic change in its two year involvement with Project Open. These changes have been evidenced in faculty development, curriculum change, facility rennovation, equipment inventory, community awareness, and in my opinion has changed the entire school in a pronounced fashion.

The contractual arrangement between the University and Wetzel County has been fulfilled. The curriculum has been totally revamped and appears to be well designed for the needs of Wetzel County. At the same time this program represents a form of Technology Education which is viable and workable. As a matter of fact the program is now ready to move into the third year without any major revisions necessary. This means that the schedule outlined for the development of the program at Hundred (by the consultant) is on schedule and should allow for a smooth transition at the conclusion of the project.

Specifically, during the 1974-75 academic year, the curriculum was revised to accommodate new areas, such as visual thinking, and enhanced by the purchase of new equipment and facility rennovation. Even more importantly, the subject matter presented to the students, now involves problem solving in the technologies. This is quite a contrast from the instruction that took place before the project. There is also a noticeable difference between 1973-74 and 1974-75. This indicates that the project has been well designed, the teachers received good in-service education, and the county has cooperated in a professional manner conducive to change.

While visiting the project (on-site) one might miss other aspects of the project which are more subtle. I refer to the fact that many teachers in other disciplines are now involved (i.e. home economics), the library has been expanded, community awareness has been generated, and most importantly the students are excited and learning. This is evidenced by the massive increase in enrollments on a volunteer basis.

It would be easy to isolate other positive factors about the program at Hundred however I would like to state that the proof of the program lies with what happens to youngsters. In my opinion the program is making a vital contribution to their education for the future.

As the program moves into its third year other challenges must be met. Two are paramount in my mind. Number one is to see that the consultant slowly fades from "the scene" and that the program continues without his tutelage. Number two, is to make sure that the program maintains the critical balance in curriculum efforts which balance the human/society/technology equation. This concern was expressed in an earlier evaluation and I would encourage the faculty, consultant and university to work toward this end.

As a liaison person for this project I have no reservations about what has gone on throughout the past two years nor do I have any about the plans for 1975-76.

Sincerely,

D Lauda

Donald P. Lauda
Coordinator

DPL/fb

CC: Mr. Jack Dulaney
Dr. David McCrory

V. Future Progress:

The courses for the 1975-76 school year are presently in the design stage. Loy Stull has most of his curriculum work completed for a new course in Visual Thinking and Illustration. Roy Brasher and Sara Kelly (an English teacher) will team up for a Communications Technology course dealing with several forms of media. They will meet this summer to complete the curriculum work remaining for that course.

To help the students select the new courses being offered, the following course descriptions were made up and included in the student handbook.

A. 1975-76 Course Descriptions:

Visual Thinking and Illustration 9 & 10:

Is a course designed to provide basic knowledge and skills in measurement, sketching, lettering, detailed sections revolutions and visual awareness for proportions and relationships. Students will be involved in problem solving and propose design solutions that graphically communicate ideas. Design projects will include the use of perspectives and shading techniques to enhance the balance and rythm of the rendering. The use of mechanical and free hand techniques of drawing will be employed in this course.

Communications Technology 11 & 12:

The English and Industrial Arts department will team up to conduct a study of modern communications media: newspaper, radio, television and publications. A field trip for each segment will be coordinated with classroom theory, writing experiences, and practical aspects of broadcasting, printing and videotaping.

Project will include a literary publication, and a school "radio" program among others to be determined at a future date.

B. Expansion to Valley and Magnolia:

During the spring of each year the consultants and teachers involved in Project Open have presented a visual progress report to the Board of Education. This year the review also included some students who demonstrated their projects developed from a Power Technology course offered at Paden City High School.

The Superintendent has traditionally recommended continuation of present contracts and expansion according to his overall curriculum plan during this review meeting. He did so this year and suggested to the Board that another consultant be contracted for curriculum work at Magnolia High School. The Board agreed and further suggested to the Superintendent that he look into the possibility of also contracting a fourth consultant to begin curriculum work at Valley High School. Therefore, the 1975-76 school year will find all four Jr./Sr. High Schools included in the Project Open effort towards a county wide curriculum.

The new consultants have been secured by the University and will report for work on July 1, 1975.

Don Sheppard is from Illinois and is assigned to Magnolia High School. He has a B.S. Ed and M Ed in industrial arts and has taught in public schools for several years. In addition, Don brings with him a unique background in training programs for industry. He will be working with Keith Ritz and George Marshall at Magnolia.

Fred Fox is from Austin, Texas and is assigned to Valley High School. He has a B.S. Ed and M.S. Ed in industrial arts and has taught in public schools for three years. Fred will be working with Bob Jones and a new teacher who will be hired this spring.

All four consultants and eight teachers will work together during the 1975-76 school year to solve some county wide problems and begin the county curriculum plan.

C. County Wide Inservice:

In terms of county wide inservice, a series of three meetings were held this year to develop a rationale, goals and objectives for the areas of Production, Transportation and Communication. Next year these inservice meetings will continue on a monthly basis in an attempt to get consenus on the county direction, style and format of the curriculum plan, and joint activities which may be shared. This additional inservice time will be provided at no additional costs to the county.

D. Withdrawing the Consultant at Hundred and Shifting Responsibility:

The consultant has been actively working towards fading himself out of the curriculum development process during the past year. Both Roy Brasher and Loy Stull were responsible for developing a complete course, modifying facilities, and ordering supplies and equipment as part of the shifting of responsibility.

All budget responsibilities will be changed over to the teachers on July 1, 1975 under the direction of Jon Shriver, principal at Hundred High. Revision of the 1974-75 pilot courses will be made by the individual teacher this summer and reviewed by the consultant in late August. The only exception will be the two new pilot courses which the consultant will continue to provide inservice support next year.

It is planned by the consultant to involve both teachers next year in writing this final curriculum plan which will be the start of a overall county curriculum package. Support will be provided whenever necessary, but in general, the consultant will deal less with the mechanical nuts and bolts effort and more with the idea/resource/review part of the curriculum effort.

In conclusion, the consultant has planned a total shift of curriculum responsibility to both teachers by January 1976. The consultant will use the remaining months of the contract to evaluate the project and package and print the final curriculum plan for the county.

APPENDIX A

Project Open Contract

WEST VIRGINIA BOARD OF REGENTS

on behalf of

WEST VIRGINIA UNIVERSITY
MORGANTOWN, WEST VIRGINIA 26506

PROJECT OPEN AGREEMENT

(CONTINUATION)

with

WETZEL COUNTY SCHOOLS

NEW MARTINSVILLE, WEST VIRGINIA

FEBRUARY, 1975

The following agreement is between the Wetzel County Board of Education and the West Virginia Board of Regents, hereinafter referred to as "Board", acting for West Virginia University, hereinafter referred to as "University". The University, through its Technology Education Program, agrees to provide the following curriculum development services for Wetzel County, West Virginia for the period July 1, 1975 to June 30, 1976.

I. Purpose of the Agreement:

This Project Open Agreement is designed to provide the county with:

1. curriculum development in technology education designed expressly for Wetzel County, and
2. professional development for Wetzel County teachers involved with the technology education curriculum.

Project Open is planned on a cooperative basis with Wetzel County in order to correlate with the County's comprehensive educational plan.

The University, through the Technology Education Program will continue to provide the County with consultant services for curriculum development in technology education. Training Associates are assigned to the project, and will continue to be supported by the staff and facilities of the Technology Education Program.

This agreement constitutes a continuation of ongoing programs at Hundred High School and at Paden City High School.

II. Structure of the Project:

When the project was initiated, the County and the University employed as a Training Associate, a qualified teacher/scholar for each consultant position identified on the budget page of this agreement. Each Training Associate are engaged in graduate studies in the Technology Education Program at West Virginia University while providing an average of twenty man-hours per week to the project. Qualifications of Training Associates are determined jointly by the County Superintendent's office and the Technology Education Program.

III. Responsibilities of the Training Associate:

Each Training Associate will continue to:

1. plan a program of action leading to the design, development, implementation, and publication of an appropriate curriculum in industrial arts for the project school(s),
2. design and conduct an inservice education program for the industrial arts faculty in the project school(s),
3. provide ancillary services as required or requested for the success of the project,
4. develop and conduct an assessment of the project as the program proceeds, and
5. compile and distribute to County school officials the result of the project, including reports of the instructional design, implementation, and evaluation.

IV. Responsibilities of the University:

The University will continue to:

1. conduct each curriculum development project, in cooperation with County personnel, including provisions for management functions, professional services, and design functions as required by the program,
2. recruit, screen, recommend, and employ, in cooperation with county personnel, project personnel qualified to insure a successful program,
3. provide support services for the project, through the Technology Education Program for personnel training, curriculum design, instruction, and evaluation, and
4. provide tuition, fees, and other benefits available for salaried graduate students as Training Associates participating in each project.

V. Responsibility of the County:

Wetzel County will:

1. provide instructional materials, devices, and other services required for the successful implementation of the program design at a level consistent with normal operation or as required for the new curriculum design,
2. assign a member of the Wetzel County Superintendent's staff to the project as a liaison with the Training Associates and the Technology Teacher Center at West Virginia University, and,
3. secure the cooperation of all county personnel directly related to the project, including the Principal of the school(s) where the program will be implemented.

VI. Time Schedule:

This Project Open is designed for a twelve (12) month time period beginning July 1, 1975 and terminating June 30, 1976. This schedule provides time for both development and evaluation of the project.

VII. Termination of the Agreement:

West Virginia University and Wetzel County may terminate the agreement by mutual consent:

1. prior to contract implementation if personnel for the project are not secured by July 1, or
2. prior to completion of a full contract if both parties agree on a negotiated settlement.

VIII. Payment Schedule:

The Board of Education of Wetzel County, West Virginia will reimburse the University for the costs of the program according to the following payment schedule.

1st payment	July 1, 1975	25% of total contract
2nd payment	October 1, 1975	25% of total contract
3rd payment	January 1, 1976	25% of total contract
4th payment	April 1, 1976	25% of total contract

PROJECT OPEN AGREEMENT

THIS AGREEMENT, made on the _____ day of ___________, 1975, by and between the Board of Education of the County of Wetzel hereinafter referred to as "Local Agency", and West Virginia Board of Regents, hereinafter referred to as "Board", acting for West Virginia University, hereinafter referred to as "University".

WITNESS THAT:

WHEREAS, the parties to this agreement have discussed the matter of the University furnishing certain services to the Local Agency, and, as a result of such discussions, the University has prepared and submitted to the Local Agency a proposal entitled "Project Open Agreement (Continuation)" and bearing the date February, 1975, hereinafter referred to as "Proposal",

NOW THEREFORE, the Board, acting through the University hereby agrees to perform the services which are set forth in detail in said Proposal, a copy of which is attached to this agreement as part hereof, and to perform such services in the manner specified therein. The Board, acting through the University, further agrees to complete the performance of such services as specified in the proposal schedule.

The Local Agency hereby agrees to pay the Board for its services in the amount and in the manner set forth in the budget provisions of said Proposal.

WITNESS the signatures of the duly authorized officers of the parties of this agreement.

______________,	______________,	______________.
President Board of Education County of Wetzel	Superintendent Wetzel County Schools	James G. Harlow President West Virginia University

APPENDIX B

Course Outlines

CONSTRUCTION TECHNOLOGY

GRADE 7

WEEK	DAY	CONTENT
		CONSTRUCTION TECHNOLOGY
1	1	I. Man and Technology
	2	a. The Dawn of Man
	3	b. The beginning of an Economic System
	4	c. Processiong Economics Goods
	5	d. Production Technology Breakdown
2	1-5	e. Construction Technology:
		1. Past
		2. Present
		3. Future
3	1-5	II. Applying Technology to People
		a. The Labor Force
		b. Personnel Technology
4	1-5	c. Management in Construction
		1. Planning
		2. Organizing
		3. Controlling
5	1-5	III. Decisional Construction Technology
		a. Feasibility Studies
		b. Selecting the Site
6	1-5	c. Buying Real Estate
		d. Surveying and Mapping
7	1-5	e. Soil Testing
		f. Developing Preliminary Ideas
		g. Refining Ideas
8	1-5	h. Selecting a Design
		i. Making Working Drawings and Specifications
		j. Selecting a Builder
9	1-5	k. Contracting
10	1-5	IV. Substructure Technology
		a. Getting Ready to Build
11	1-5	b. Clearing the Site
		c. Locating the Structure
12	1-5	d. Earthmoving
		e. Classifying Structure
13	1-5	f. Setting Foundations
		1. Building forms
		2. Reinforcing Concrete
		3. Mixing and Testing Concrete
		4. Competing Foundations

14	1-5	V. Superstructure Technology
15	1-5	a. Erecting Studs
16	1-5	b. Erecting Concrete
17	1-5	c. Building Wooden Frames
18	1-5	d. Installing Utilities
		1. Electricial
		2. Heating
		3. Plumbing
		4. Communications
19	1-5	e. Enclosing Framed Structures
		1. Roofing
		2. Exterior Walls
		3. Insulation
		4. Interior Walls
20	1-5	f. Finishing the Structure
21	1-5	g. Completing the Site
22	1-5	VI. Construction Production Technology
		a. Building Dams
23	1-5	b. Building Bridges
		c. Building Roads
		d. Building Skyscrapers
24	1-5	VII. Construction Technology of the Future
25	1-5	a. Constructing Housing
		1. Past
		2. Present
		3. Future
6	1-5	b. Influence of Society of Future Construction
27	1-5	c. Man's Future Housing Needs
28	1-5	d. Problem Solving for the Future
29	1-5	e. Projected Design Technology
30	1-5	f. Completion of Problem Solving Activity
		g. Community and World Planning
31	1-5	h. Analyzing the Constructed World of 2000 A.D.

MANUFACTURING TECHNOLOGY

GRADE 8

WEEK	DAY	CONTENT
1	1	I. Man and Technology
	2	a. The Evolution of Manufacturing
	3	b. The Industrial Revolution
	4	c. Age of Automation
	5	d. Manufacturing and the Economic System
2	1-5	e. Manufacturing System
		1. Management Technology
		2. Production Technology
		3. Personnel Technology
3	1-5	II. Planning Processes in Manufacturing Goods
		a. Inputs to Manufacturing
		b. Organization, Ownership and Profits
4	1-5	c. Consumer Needs
		d. Research and Development
5	1-5	e. Design Solutions
		f. Engineering Solutions
6	1-5	g. Making Working Drawings
7	1-5	III. Pre-Production Technology
8	1-5	a. Building the Production Prototype
9	1-5	b. Planning Processes
10	1-5	c. Estimating Cost
11	1-5	d. Tooling-up for Production
		e. Designing Control Systems
12	1-5	f. Designing the Production Plant
		g. Securing Raw Materials
13	1-5	h. Securing Labor and Management
		i. Time Studies and Plant Control
14	1	IV. Production Technology
		a. Preprocessing
	2	b. Processing
	3	c. Post Processing
	4	d. Servicing the PRoduct
	5	e. Evaluation of the Product
15	1	V. Product Technology
	2	a. Primary Metals
		b. Textile Mill Products
	3	c. Petroleum Products
	4	d. Chemical Products
	5	e. Material Forming

16	1	f. Casting and Molding
		g. Compressing and Stretching
	2	h. Conditioning Material
	3	i. Finishing Material
	4	j. Bonding and Fastening
	5	k. Packaging
17	1	l. Distribution
	2-5	VI. The Manufacturing Corporation
18	1-5	a. Forming a Corporation
		b. Relating People to the Corporation
19	1-5	c. Making Sales Forcsts
20	1-5	d. Obtaining Capital, Estimating Profits and Keeping Records
		e. Locating the Plant and Securing Inputs
21	1-5	f. Designing and Engineering the Product
22	1-5	g. Planning Production Processes
23	1-5	h. Establishing Production and Quality Control
24	1-5	i. Making and Combining Components and Assemblies
25	1-5	j. Arranging for Distribution and Sales
26	1-5	k. Liquidating the Corporation
27	1-5	VII. Manufacturing Technology of the Future
		a. Computers
		b. Automation
28	1-5	c. Energy and Raw MAterials
		d. Technological Product Forcasting
29	1-5	e. Plant Design
30	1-5	f. Human Needs
31	1-5	g. Analyzing the Manufactured World of 2000 A. D.

CRAFTS INDUSTRIES

GRADE 7 & 8

WEEK	DAY	CONTENT
1	1	I. History of Crafts
	2	a. Stone Age Man the Designer Craftsman
	3	1. Hand Crafted
	4	2. Materials direct from Nature
	5	3. Nearly all Products made by consumer
2	1	b. Growth of Artisans
	2	1. Specialized work
	3	2. Perfection of manual technique
	4	3. Division of work
	5	4. Patrons of the art
3	1	c. Machine Production
	2	1. Workmanship of risk vs. workmanship of certainty
	3	2. Social/cultural base needed for the machine
	4	3. New criteria for product value
	5	4. Product integrity-painting vs. photograph
4	1	d. Future of the Crafts in a Technological Society
	2	1. Leisure
	3	2. Self expression
	4	3. Products that enhance or degrade man
	5	4. Craft as art form
		II. Design
5	1-5	a. Principles of design
6	1-5	b. Design factors
		c. Design functions and compromise
7	1-5	d. Design Process
8	1-5	1. Measuring and defining problem
		2. Brainstorming and thumbnails
9	1-5	3. Visualizations-renderings
		4. Experimental model or product
10	1-5	5. Evaluation
11	1-5	III. Safety in the Craft Shop
		a. Laboratory use-general procedures
12	1-5	b. Use of tools and machines
13	1-5	c. Eye safety
		d. Work habits that lead to safety
14	1-5	1. Respect for tools
15	1-5	2. Clean orderly work environments
16	1-5	3. Controlled social environments
17	1-5	4. Craftlike way of doing things
		e. Reporting injuries and safety hazards
18	1-5	f. Fire drill procedures

19	1-5	IV. Materials
20	1-5	a. Source
		1. Natural
		a. Used essentially as provided by nature
21	1-5	b. Wood stone leather clay
		2. Converted
		a. Changed substantially by man
22	1-5	b. Metals glass paper cloth
23	1-5	3. Synthetic
24	1-5	a. Changed extensively by long and complex processing
25	1-5	b. Wax plastic linoleum
		b. Properties of material
26	1-5	1. Integrity of materials
27	1-5	2. Properties of physical strength
28	1-5	3. Psychological properties
		4. Combining materials
29	1-5	c. Material Utilization
		1. Standard units and measurement
30	1-5	2. Cost
31	1-5	3. Conservation
32	1-5	4. Storage

INDUSTRIAL CAREERS

GRADE 9

WEEK	DAY	CONTENT
		Industrial Careers
1	1-5	I. The Technological World of Industry
		a. Industry
2	1-5	b. What Shall we Call our Industrial System?
		c. Goods and services
3	1-5	d. The Importance of Industry
		e. Industry Provides Jobs
4	1-5	II. Types of Modern Industry
5	1-5	a. The Manufacturing Industry
		b. The Construction Industry
6	1-5	c. The Power and Transportation Industry
7	1-5	d. The COmmunications Industry
8	1-5	III. Entering the World of Work
		a. You and Work
9	1-5	b. Jobs: Choices and Opportunities
10	1-5	c. Applying for a Job
		d. You, Your Employers, and Your Co-workers
11	1-5	e. Your Progress on the Job
		f. Self Inventory
12	1-5	g. Personal Effectiveness
13	1-5	IV. Management
		a. Planning
14	1-5	b. Organizing
		c. Directing
15	1-5	d. Evaluating
		e. The Ladder of Management
		f. Company Organization
16	1-5	V. Industrial Process
		a. Gross National Product
17	1-5	b. Productivity
		c. Seven Aspects of a Successful Company
18	1	1. Money
		2. Machines
	2	3. Materials
	3	4. Manpower
		5. Methods
	4	6. Markets
	5	7. Management
19	1	d. Profit

19	2-5	VI. The Government and Industry
		a. Competition vs. Monopoly
20	1-5	b. Public Utilities
		c. Patents
21	1-5	d. Copyrights
22	1-5	e. Trademarks
23	1-5	VII. Meeting Your Adult Responsibilities
		a. Managing Money
24	1-5	b. Buying Goods and Services
		c. Credit and Installment Buying
25	1-5	d. Contracting for Goods and Services
		e. Using Bank Services
26	1-5	f. Buying and Using Government Services
		g. Social Security and Retirement
27	1-5	h. Insurance
28	1-5	VIII. Meeting Future Responsibility
29	1-5	a. Vocational Development, Changing Responsibility
30	1-5	b. Post High School Education and Training
31	1-5	c. The Nature of Work in the Future
32	1-5	d. Technology: Its Affect on Work

WOODWORKING TECHNOLOGY

WEEK	DAY	CONTENT
		Woodworking Technology
1	1	I. The History, Development and use of wood
	2	a. Weapons and tools
	3	b. Agricultural Changes influenced by the use of wood
	4	c. Wood and coal as a fuel for industrialization
	5	d. The use of Wood in an industrialized society
2	1-5	e. Modern products developed from the wood industry
3	1-5	II. Characteristics of Wood
		a. Tree growth
4	1-5	b. Cellular structure of wood
		c. Conditioning of wood
5	1-5	d. Factors influencing the strength of wood
		e. Types of trees
		f. Hardwoods and softwoods
6	1-5	III. The Wood Industry
		a. Wood influences on our economy
		b. Career opportunities
7	1-5	c. Production of commerical wood products
		d. Related industries
8	1-5	e. Recycling wood products
9	1-5	f. Growth and re-growth practices for conservation
10	1-5	IV. Product Planning
11	1-5	a. Historical Design
		b. Design Factors
12	1-5	c. Structural Design
13	1-5	d. Making and reading plans
14	1-5	e. Determining wood costs
15	1-5	V. Materials Modification
		a. Layout tools and procedures
16	1-5	b. Separating process
17	1-5	c. Planning procedures
18	1-5	d. Shaping and forming irregular shapes
19	1-5	e. Forming cylindrical shapes
20	105	f. Lamination procedures
21	1-5	g. Assembly and fasterning parts

22	1-5	VI. Materials Finishing
		a. Auxiliary Parts
23	1-5	b. Preparing surfaces
24	1-5	c. Filling and sealing
25	1-5	d. Commerical Finishes
26	1-5	e. Post finish maintenance
27	1-5	VII. Product Evaluation
		a. Strength of wood
		b. Nail and screw holding power
28	1-5	c. Characteristics of glue (hot & cold)
		d. Testing and holding power of joints
29	1-5	e. Lamination and veneer qualities
30	1-5	f. Effects of weather on wood and holding devices
31	1-5	g. Materials used for exterior, interior, and marine applications
		h. Available protective sealers for wood products
32	1	VIII. Related wood industries
	2	a. Construction industry
	3	b. Cabinet making industry
	4	c. Mass produced furniture industry
	5	d. Paper and cardboard industry
		e. Mechanical fasteners industry
		f. Woodworking tool industry
33	1-2	g. Hobby and recreation industry

GRAPHIC COMMUNICATIONS

GRADE 9 & 10

WEEE	DAY	CONTENT
		Graphic Communications
1	1-5	I. Man's Desire to Communicate
		a. Knowledge and Ideas
		1. Inform
		2. Influence
2	1-5	b. Develop and Maintain Social Institutions
		1. Government
		2. Family
3	1-5	3. Economic System
		4. Religion
		5. Education
4	1-5	c. Communication Systems
5	1-5	1. Man to man, interpersonal
		2. Man to machine, visual, audio, and audio/visual
6	1-5	3. Machine to man, visual, audio, and audio/visual
7	1-5	4. Machine to machine, computers
8	1-5	II. Image Assembly
		a. Message Analysis
		1. Need
		2. Receiver
		3. Age
9	1-5	b. Design Principles
		1. Contrast
		2. Balance
10	1-5	3. Discord
		4. Rhythm
		5. Proportion
		c. Layout
11	1-5	d. Composition
		1. Background
		2. Tone balance
12	1-5	3. Subjects size in picture
		4. Subject position
		5. Camera position
13	1	III. Development of Communication Processes and Systems
	2	a. Man's Early Attempts
		1. Gestures, grunts, signals
	3	b. Alphabet and Language
		1. Development of community living
		2. Written communication, cave drawings, hieroglyphics, cly tablets, pottery, and papyrus

	4	3. Phoenicians, meaning of letters
	5	4. Greeks and Romans, present day alphabet
14	1	c. Development of Media 1. Monks, wealthy and religious sects 2. Contribution of monks, able to record ideas, share knowledge, inform and influence 3. Eastern developments, modern day paper, manufacturing of ink, first mass produced book, wood block carvings 4. Western developments, invention of movable type, development of printing processes, telegraphy (1832), photography (1839), phonography, radio, telephone (1876), motion pictures (1895), television (1926), cable phone, picture phone and satellite communications
15	1-5	IV. Image Generation a. Visual (Planeographic)
16	1-5	1. Composition methods, hot composition, cold composition, photo/computer composition and continuous tone composition
17	1-5	2. Copy preparation, kinds of copy, consideration, mechanicals, and instructions
18	1-5	3. Process photo conversion, films and chemistry, exposure, developing techniques, safety, and half-tones
19	1-5	b. Visual (Photo Technology) 1. Cameras, sub-miniature, 35mm, roll films, press, viewfinder and camera handling
20	1-5	2. Lighting/exposure, natural flash, meters
21	1-5	3. Lens theory/uses, aperature, depth of field, interchangability
22	1-5	V. Image Preproduction, and Production a. Visual Production(Screen) 1. Paper stencil 2. Hand cut 3. Photographic
23	1-5	b. Visual Production (Offset) 1. Stripping
24	1-5	2. Platemaking
25	1-5	3. Press orientation/operation; dampening, inking, feeding, registration, delivery and cleaning

26	1-5	c. Visual Production(Continuous Photo) 1. Contact printing 2. Papers and chemistry 3. Enlarger orientation 4. Finishing 5. Mounting	
27	1-5	d. Visual Production (Granure) 1. Orientation	
28	1-5	e. Visual Production (Office Duplication) 1. Spirit duplicating 2. Electrostatic 3. Mimeograph	
29	1-5	VI. Future developments of Mass Communication Systems a. Social and Cultural Effects 1. Literature 2. Education 3. Communication	
30	1-5	b. Career Opportunities 1. The nature of work 2. Automation of mass media 3. Leisure time, its effect on vocational development 4. The computer and work 5. Future communication careers	
31	1-5	c. Methods of Transmission 1. New equipment development 2. Space transmission technology	
32	1-5	d. Environment Considerations 1. The country 2. The world 3. The universe	

ADVANCED MATERIALS TECHNOLOGY

GRADE 11 & 12

WEEK	DAY	CONTENT
1	1	I. Man and his use of Materials
	2	a. Basic materials used by man during: 1. Antiquty
	3	2. Middle Ages
	4	3. Industrial Age
	5	4. Future
2	1 2	b. How Technology has advanced man's control and use of materials
	3	c. Man's use of natural materials
	4	d. Man's use of synthetic materials
3	1-5	II. Matter, energy and fuels:
4	1-5	a. Classification of matter, chemical and physical change
5	1-5	b. Atomic theory and structure and the nature of bonding
6	1-5	c. Kinetic molecular theory, energy and stability
		d. Types of fuels and the nature of burning
7	1-5	III. Polymeric materials (Plastics rubber and wood)
8	1-5	a. Structure of polymer's
9	1-5	b. Nature of polymerization
10	1-5	c. Relationships between polymer strucutre and properties
11	1-5	d. Types of polymers; thermosetting and thermoplastic
		e. Modifying polymers for use; compounding and shaping
12	1-5	f. Relationships between wood structure and properties
13	1-5	g. Modifying wood; cutting,shaping, seasoning, perserving, veneering and laminating
		h. Testing polymers for strength, and durability
14	1-5	IV. Metals
		a. Introducing physical and mechanical properties
15	1-5	b. Relating metallic properties to structure 1. Nature of metallic bonding
16	1-5	2. Effects of crystal structures and imperfections
17	1-5	c. Modifying metallic properties; alloying, heat treatment and work hardening
18	1-5	d. Ferrous and nonferrous metallurgy
		e. Semiconductor concepts and technolgy
19	1-5	f. Testing metals for strength and durability

20	1-5	V. Ceramic Materials
21	1-5	a. Relating ceramic properties to structure 1. Silica tetrahedral crystal structures 2. Effects of strong covalent bonds
22	1-5	b. Earth science concepts; geologic formation of ceramic minerals, weathering and erosion
23	1-5	c. Clay processing, plasticity factors and shaping
24	1-5	d. Glass, amorphous structures, effects of changing composition and modifying glass with heat
25	1-5	e. Bonding materials, Portland cement setting mechanism, concrete and effects of aggregates and reinforcement techniques
26	1-5	f. Testing ceramic materials for strength and durability
27	1-5	VI. Composite materials
28	1-5	a. Nature of composites,tailoring structures and properties to specific uses
29	1-5	b. Types of composite strucutres, phases, interfaces and their possible shapes and arrangements
30	1-5	c. Future of composites; promising examples of new materials using techniques of composite structure
31	1-5	d. Developing and testing composite strucutres

ELECTRICITY/ELECTRONICS

GRADE 11 & 12

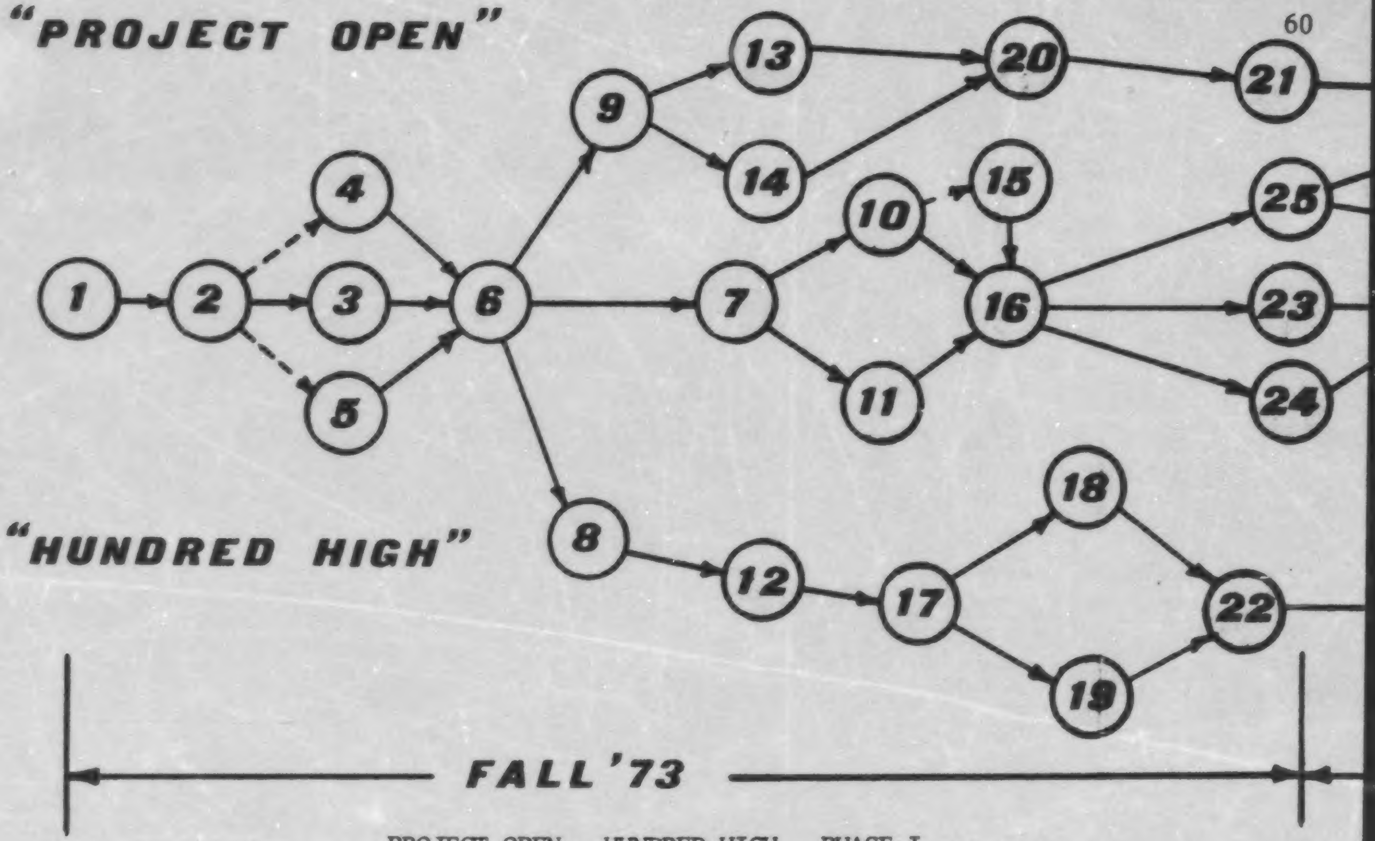
WEEK	DAY	CONTENT
		Electricity/Electronics
1		I. Electricity as a Power Source
		a. History and Development of Electrical Technology
	1	1. Greeks use of Amber as a source of static electricity
	2	2. Ben Franklin, Harnessing static electricity vis the kite
	3	3. Henry Volta, the discovery of the volta pile(Chemical battery)
	4	4. Michael Faraday, invention of the mechanical generator
	5	5. Thomas Edison, discovery of the light bulb, organization of the first commerical power system
2	1-5	b. Natural power sources
		1. Chemical
		2. Solar
		3. Hydro-water
		4. Pheumatic-wind
3	1-5	5. Fossel Fuel
		6. Nuclear
		7. Geothermal
		8. Thermal
4	1-5	c. The Nature of Electricity
		1. Static
		2. Direct Current
		3. Alternating Current
5	1-5	II. Circuit Theory
6	1-5	a. Ohm's Law
7	1-5	1. Current
		2. Voltage
		3. Resistance, color code, conductors and resistors
8	1-5	b. Basic Circuitry
9	1-5	1. Series
10	1-5	2. Parallel
11	1-5	3. Compound
12	1-5	c. Schmatic Drawing and Reading
		1. Symbols
		2. Format
13	1-5	d. Problem solving
		1. Automotive Systems
14	1-5	2. Domestic Electrical Systems

15	1-5	III. The Use of Magnetism
		a. Nature of Magnestism
		1. Attraction and Repulsion
		2. Limits of Force
16	1-5	b. Magnetic Materials
		1. Magnetic
		2. Non-magnetic
		3. Anti-magnetic
17	1-5	c. Classification of Magnets
		1. Natural
		2. Man Made (Electro and Permanent)
18	1-5	d. Inductance
		1. Natural
		2. Electrically Induced
19	1-5	IV. Capacitance
		a. The Capacitor
		b. Capacitance
		c. Capacitance Caculations
20	1	V. Electrical Application
		a. Communications
	2	1. Radio
		2. Television
	3	3. Sound Systems
		4. Broadcasting
	4	5. Microwave
		6. Telemetering
	5	7. Telephone
		8. Teletype
21	1	b. Navigation
	2	1. Radar
	3	2. Sonar
	4	3. Loran
	5	4. Direct-Finding
22	1	c. Industrial
		1. Inspection
	2	2. Regulation
		3. Testing
	3	4. Counting
		5. Separating
	4	6. Power
		7. Motors
	5	8. Controls
		9. Lighting
		10. Monitoring
		11. Cleaning
		12. Ultrasonics
23	1	d. Home
		1. Power
	2	2. Lighting
		3. Cooking

	3	4. Appliances
		5. Cleaning
	4	6. Air-conditioning
	5	7. Heating
24	1	e. Instrumentation
		1. Measurement
	2	2. Application
		3. Chemistry
	3	4. Physics
	4	5. Astronomy
		6. Radiation
	5	7. Meteorology
25	1-5	f. Computers
		1. Digitial
		2. Analog
		3. Automation
26	1	g. Medical
	2	1. Therapy
	3	2. X-Ray
	4	3. Food Preservation
	5	4. Instrumentation
		5. Microscopy
27	1	h. Hobby
	2	1. Amateur Radio
		2. Radio Control
	3	3. Citizens Radio
	4	4. Hi-Fi Sound
	5	5. Experimentation
28	1-5	VI. Radio Waves
		a. Wireless Communication
		1. Antenna Systems
29	1-5	2. Transmitters
		3. Oscillation
30	1-5	4. Cycles
		5. Lambda (Wave Length)
31	1	b. The Nature of a Wave
	2	1. Audio Frequencies
	3	2. Continuous Wave
	4	3. Amplitude Modulation
	5	4. Frequency Modulation

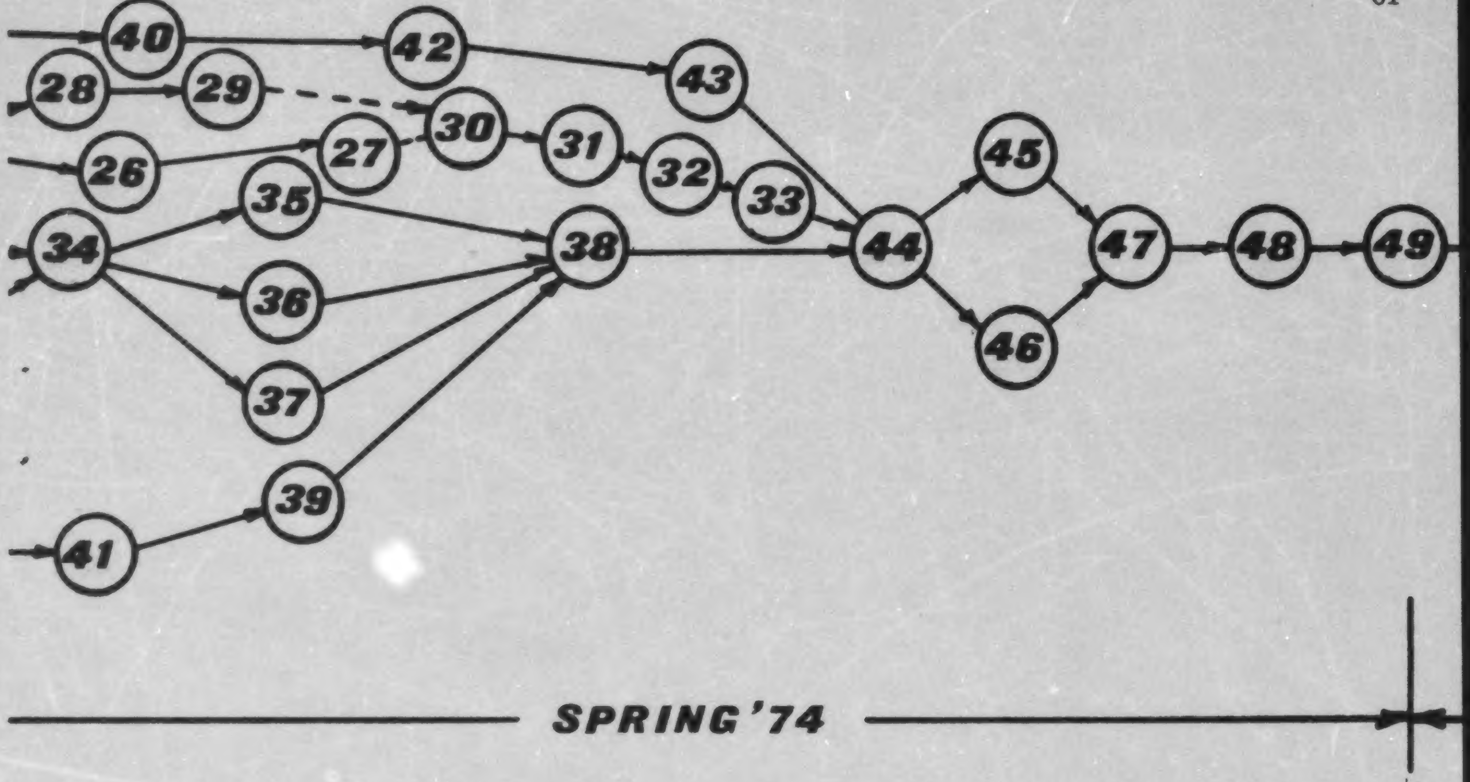
APPENDIX C

Plan of Action

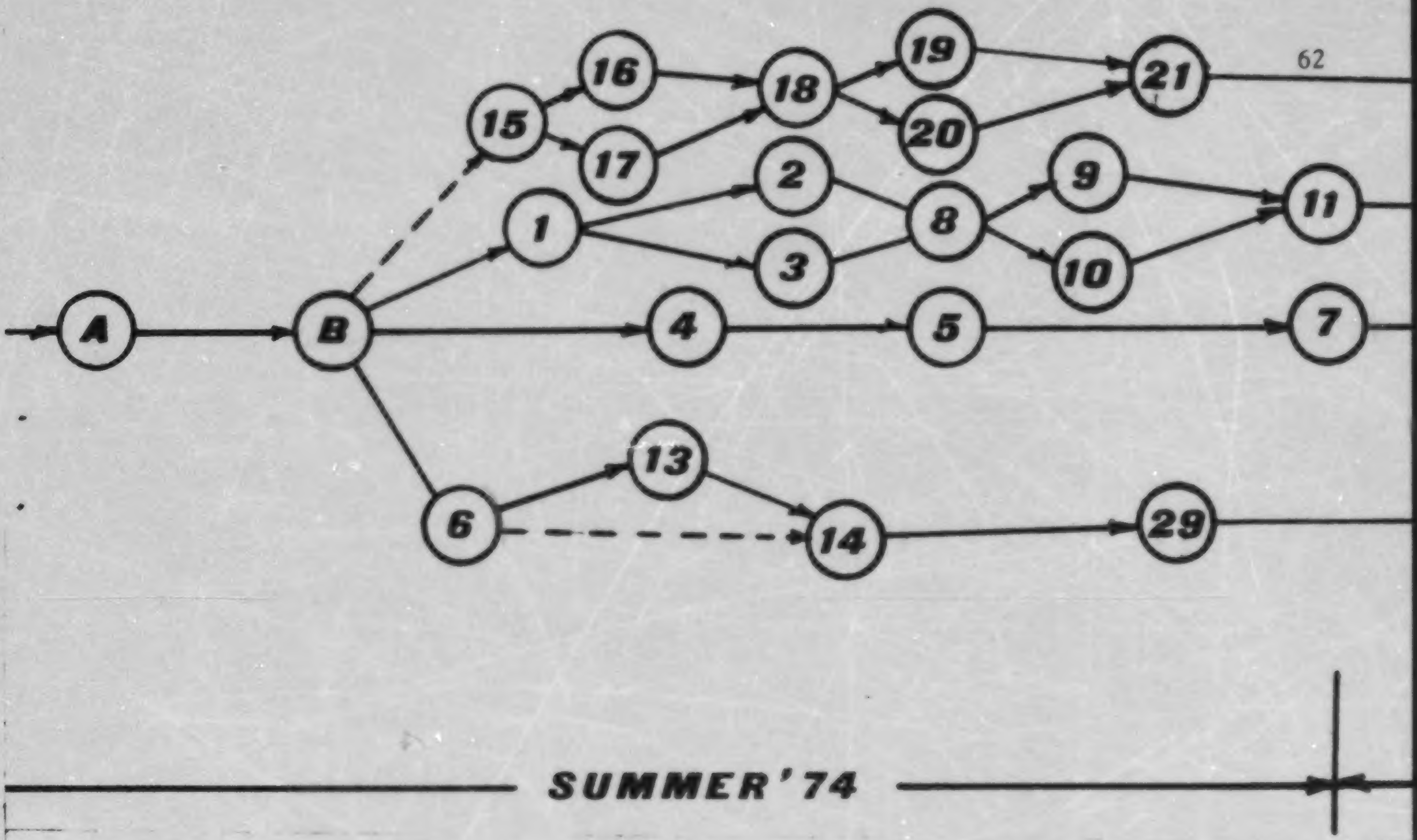


PROJECT OPEN - HUNDRED HIGH - PHASE I

1. Sign Contract for "Project Open Hundred"
2. Secure Staff for "Project Open Hundred"
3. List objectives and plan of action
4. Meet with staff at Wetzel County
5. Meet with staff at Teacher Center
6. Begin Project
7. Review present program at Hundred High
8. Set up an advisory committee
9. Survey community needs
10. Formulate and identify possible pilot programs
11. Revise and propose laboratory change and improvement
12. Set up meeting schedule for advisory committee
13. Travel throughout Wetzel County and meet people
14. Visit all high schools in the county
15. Involve the principal and guidance counselor in course identification
16. Prepare and order necessary supplies and equipment for laboratory improvement and pilot courses
17. Meet with advisory group
18. Set direction of pilot courses
19. Design evaluation instruments
20. Set up a community advisory group
21. Set up a meeting schedule for the community advisory group
22. Review ideas from advisory groups
23. Begin pilot courses
24. Begin facilities improvement
25. Secure time for inservice training
26. Set up inservice training schedule
27. Set up topics for inservice training



28. Set up schedule for October 12th inservice day at Hundred
29. Conduct October 12th inservice day
30. Begin formal inservice training
31. Order supplies for Pilots (topic)
32. Planning industrial arts facilities (topic)
33. Writing course outlines in behavioral terms and formulating curriculum (topic)
34. Organize class activities
35. Develop lesson plans
36. Give lessons and demonstrations and supervise student activities
37. Develop and use an evaluation instrument to measure effectiveness of courses
38. Final evaluation of Pilot courses
39. Implement accepted ideas from advisory committees
40. Conduct advisory meetings
41. Compare advisory committee ideas
42. Implement accepted ideas from advisory committees
43. Evaluate advisory committee effectiveness
44. Gather and formulate information
45. Write the end of the year report
46. Write curriculum guide
47. Print guide and report
48. Present report
49. End of Phase I.



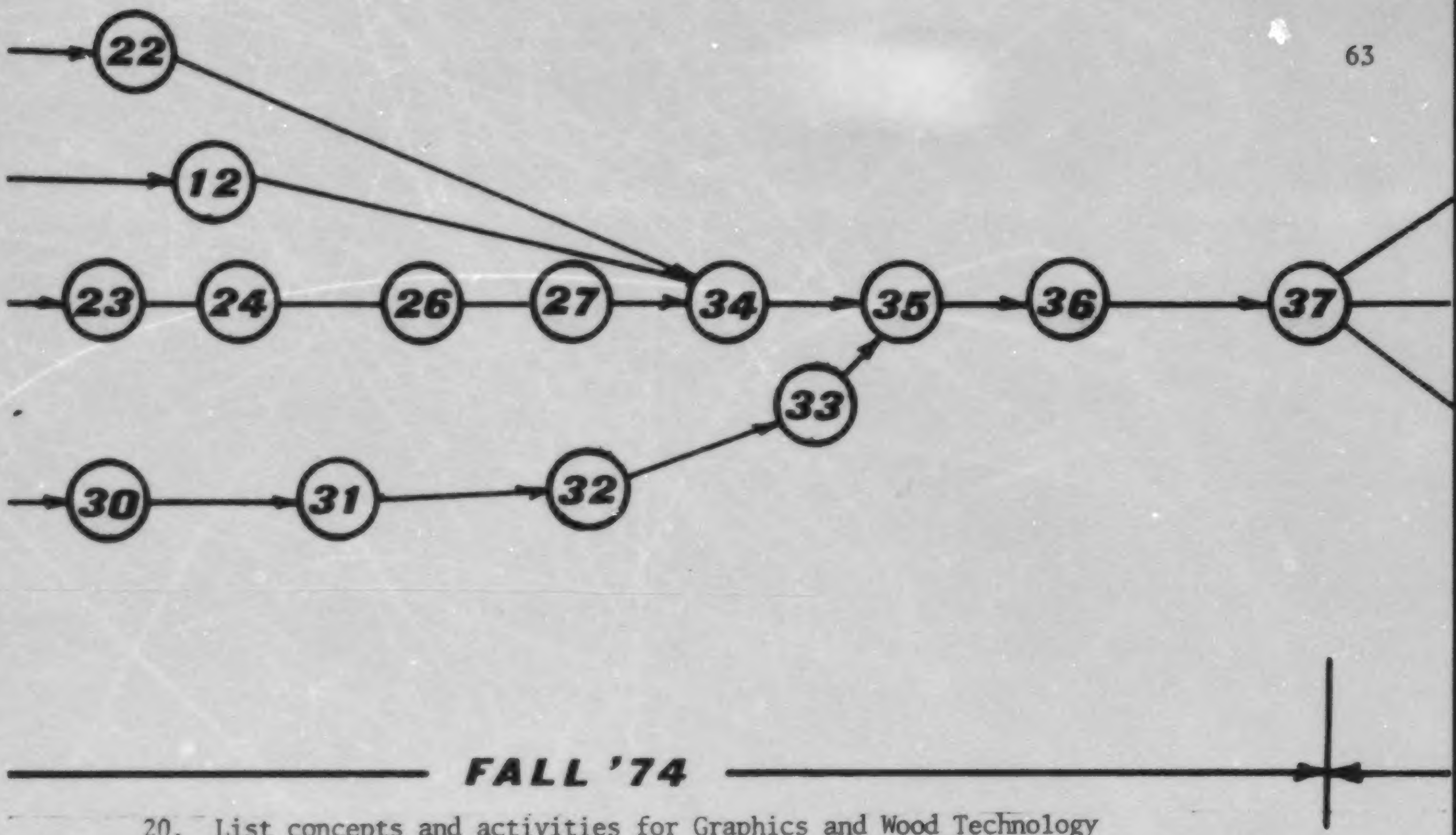
PROJECT OPEN - PHASE II

A. Review objectives and contract

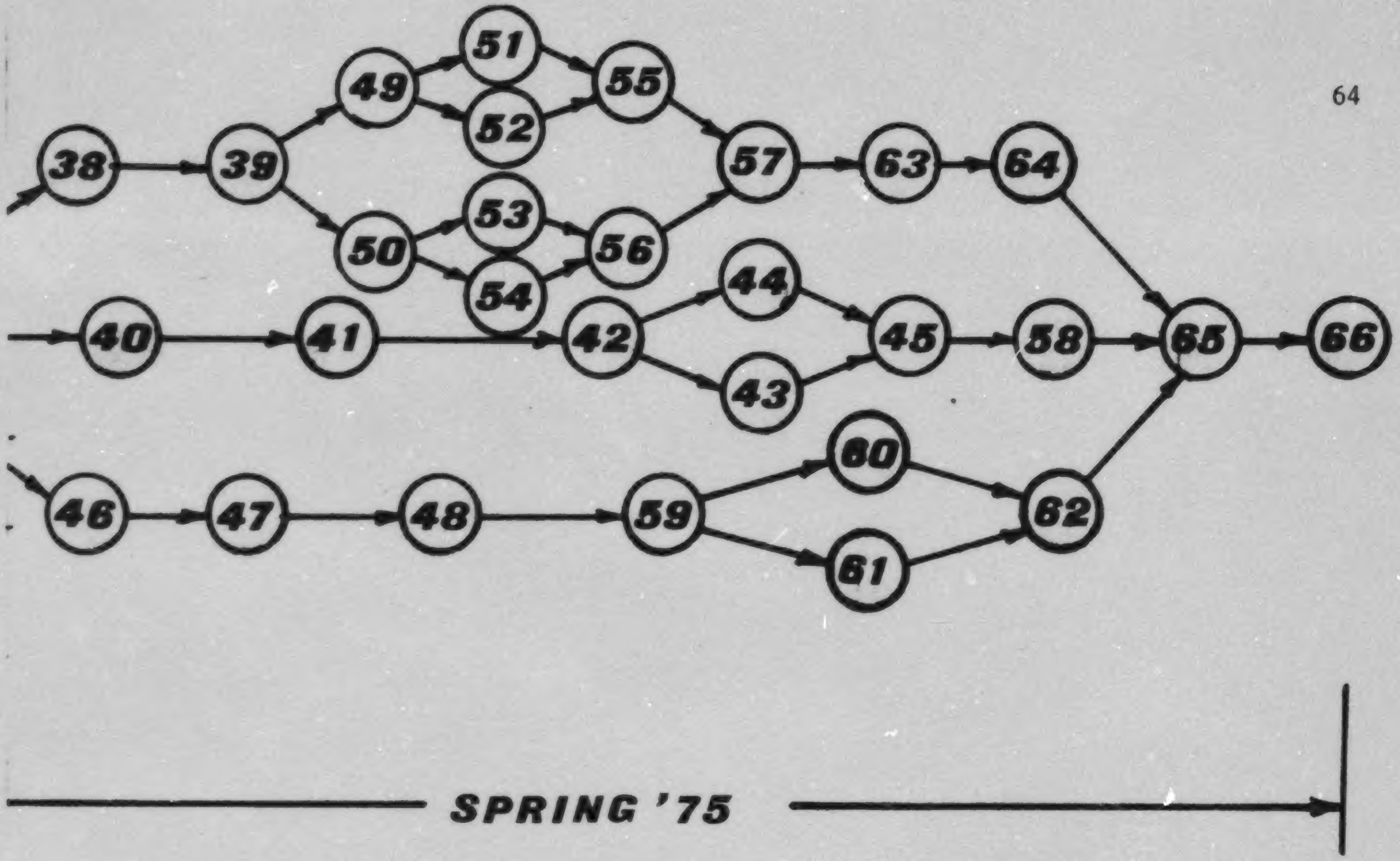
B. Set up summer schedule for planning and inservice work.

1. Review Manufacturing and Crafts Courses
2. Make revisions to Manufacturing and Crafts Courses
3. Develop more relevant activities to reinforce concepts in the Manufacturing and Crafts Courses
4. Review total project with Advisory Board - 6/19/74
5. Present Proposed changes and Critique - 6/26/74
6. Order all equipment for the Communications Center
7. Present Programs - 7/3/74
8. Revise Gantt Charts for Manufacturing and Crafts
9. Brainstorm ideas for Electricity and Materials Pilot Course
10. List concepts and activities for the electricity and materials
11. pilot course

12. Determine material needs for electricity and materials pilots
13. Budget meeting with Superintendent
14. Order supplies and materials for electricity and materials pilots
15. Review Construction and Industrial Careers Courses
16. Make revisions to Construction and Industrial Careers Courses
17. Develop more relevant activities to reinforce concepts in Construction and Industrial Careers
18. Revise Gantt Charts in Construction and Industrial Careers
19. Brainstorm ideas for Graphic Communications and Wood Technology I pilot courses



20. List concepts and activities for Graphics and Wood Technology
& 21. Pilots
22. Determine material needs for Pilots Graphics and Wood Technology I
23. Project Open Meeting - 8/10/74
24. Project Open Meeting - 7/17/74
25. Project Open Meeting - 7/24/74
26. Project Open Hundred and Paden City Administration and Teachers meeting - 7/31/74
27. Project Open Meeting - 8/7/74
28. Project Open Meeting - 8/14/74
29. Order supplies and materials for Graphics and Wood Technology pilots
30. Check in all supplies and equipment
31. Set up Communications Center
32. Set up Communications Center
33. Set up Communications Center
34. Inservice with Roy and Loy
35. Inservice with Roy and Loy
36. Inservice with Roy and Loy
37. Team inservice between Paden City, Valley High, Magnollia and Hundred at Paden City High
38. End summer work.



38 Identification and development of goals by the teachers
39 Review and revision of new goals
40 Installment of cleanup area the Communications Center
41 Complete cabinet storage area in darkroom
42 Identification of 1975/76 pilot courses
43 Description of pilot courses
44 Revision of course offerings pamplet
45 Print new course offerings student handbook
46 Meet with Jack Dulaney and the University Advisory Board for Review and Direction
47 Set up Progress Report to Board of Education
48 Conduct Review of Project Open for Board of Education
49 Develop course objectives with Roy Brasher
50 Develop course objectives with Loy Stull
51 Develop physical facilities "Project Storage" with Roy Brasher
52 Supervise ordering technique for "Project Storage"
53 Develop physical facilities "Project Planning" with Loy Stull
54 Supervise ordering technique for "Project Planning"
55 Complete "Project Storage"
56 Complete "Project Planning"
57 Compile all goals and objectives for all course outlines
58 Make corrections on heating, lighting and fumes in the Production area
59 Compile material for the end of year report
60 Write end of year report
61 Write end of year curriculum guide
62 Print end of year report
63 Conduct county wide inservice session or "Directions "76"
64 Review Directions "76" imput for the educational system and white report for Jack Dulaney
65 Complete storage and planning improvements
66 Set up summer inservice schedule

1974-75 Progress Report

for

Project Open

at

Paden City High School
Wetzel County, West Virginia

June, 1975

Submitted by

Frank R. Trocki
Training Associate in Technology Education
College of Human Resources and Education
West Virginia University

Table of Contents

I. Nature of the Project

- A. The Community
- B. The School and System
- C. The Teachers
- D. The Students

II. Purpose of the Project

- A. Community and Student needs
- B. Short Range Objectives
- C. Long Range Objectives
- D. County Coordinated Curriculum
- E. County Rationales, goals and objectives for:
  - 1. Production
  - 2. Communication
  - 3. Transportation
- F. List of 1973-75 Course Description

III. Major Accomplishments

- A. Inservice Training
- B. Course Design and Implementation
- C. Physical Facility Modification
- D. Industrial Arts Club Activities

VI. Evaluation

- A. Internal
  - 1. Principal's Report
  - 2. Teacher's Reports
  - 3. Consultant's Report
  - 4. Student Sign-up
- B. External
  - 1. State Specialist's Report
  - 2. Field Coordinator's Report
  - 3. Field Liaison's Report

V. Future Progress

- A. 1975-1976 Course Descriptions
- B. Expansion to Valley and Magnolia
- C. County wide inservice

VI. Appendix

- A. Contract
- B. Course Content Charts
- C. Gant

I. Nature of Project:

"Project Open" is a curriculum development services agreement between the Wetzel County Board of Education and the West Virginia University Board of Regents. (see appendix 1)

The Curriculum Development Agreement is designed to provide the school system with a planned educational curriculum and personnel development program in the technologies. The agreement is designed on a cooperative basis with the county to meet designated instructional and programmatic needs of the county.

The University, through the Technology Education Program, provides the county with consultant services for curriculum development in industrial arts. At Paden City High School, Frank Trocki, a training associate at the Technology Teacher Center, is assigned to the project. He is backed up in human resources by twelve other Training Associates and five university staff members. Also available to the consultant is a Technology Education Resource Center with material references and reproduction facilities.

A. The Community - Paden City:

The town of Paden City, West Virginia is located in both Wetzel and Tyler Counties. The county line almost divides the small and suburban community in half, which offers a unique educational structure for students. It is situated in the most southern part of Wetzel, and borders the Ohio River to the West, the town and county seat of Wetzel, New Martinsville to the north, and Sisterville (Tyler County) to the south and east. The towns population (Wetzel County only) is just over 2,500, and its major industries are glass and natural gas. There are many small businesses located within the community but the majority of its residents work in the larger cities, New Martinsville and Wheeling to the north, St. Mary's and Parkersburg to the south.

B. The School and System:

Paden City High School is located on Fourth Avenue on West Virginia Route 2 within the corporate limits of Paden City. It is one of four Junior/Senior High Schools which services all of the secondary educational needs in Wetzel County.

On January 8, 1975, the three-story brick structure which contained twenty-two classrooms was totally destroyed by fire. It was originally constructed in 1910 with additions of a gymnasium, 2 industrial arts labs, a band room and guidance offices in 1958. At the same time, the old gymnasium was converted to a cafeteria and chemistry classrooms. A library was built on the second floor.

The fire only destroyed the academic wing of the high school. The gymnasium, industrial arts labs, and band room were only slightly damaged by water and smoke. The community, the county, and the state quickly came to the aid in setting up temporary classroom space for the students. Churches in the area donated some space and the original gymnasium was divided into eight classrooms by seven foot partitions, and 60' x 12' trailers were sent by the state for additional space. These trailers, which are located on the school grounds, are now in the process of being reconverted into classrooms, library, offices, and will be in operation during the 75-76 school year. By doing this the churches, which are from anywhere from 5-10 minutes walk away, will not be used for high school students, except for all the home economics classes.

Paden City is split in half by county lines. Both Wetzel and Tyler counties have devised a unique educational structure for their students. Paden City (Tyler County) would provide housing for students grades 1-6, while Paden City (Wetzel) would provide housing for grades 7-12. An increase in population through 1960-1970 caused severe over crowding, necessitating the housing of some elementary students within the high school. In the future, after the new Paden City High which is now in construction, will house again students 9-12 from Paden City (Tyler and Wetzel). While Tyler County, which is also in a building program, will again resume housing the students 1-6 from Paden City (Tyler and Wetzel). The Paden City (Wetzel) seventh and eighth grade students will attend the new middle school in New Martinsville.

The Wetzel County Administrative Staff under the direction of Jack Dulaney, Superintendent, is composed of an Assistant Superintendent, Elementary Education Supervisor, Secondary Education Supervisor, Transportation Director, Kindergarten Supervisor, Director of Federal Programs and a Business Agent. The superintendent is responsible for the assignment of all school personnel and formulating a program of supervision for the schools.

The Director of Secondary Education is in charge of developing programs of instruction in each school and developing methods, devices, and techniques of teaching. It has been county policy to have the principal responsible for supervision of instruction in his building. The Director of Secondary Education is available to aid teachers if a problem should arise. All four high schools have assigned a principal and assistant principal except Hundred High, which (because of school population) has only a principal.

All high schools except Paden City (which has the special arrangement with Tyler County) receive their students from local community based elementary schools. There is not an industrial arts or technology education program at the elementary level.

C. The Teachers:

The industrial arts teachers at Paden City are certified industrial arts with experienced backgrounds.

Gary Witschey graduated from Fairmont State College in 1968 with a B.S. Ed.

in Industrial Arts. He has taught at Paden City since 1968 and has an excellent background in the building and construction industry. His major interest is in Communications Technology.

Gerry Bissett graduated from Fairmont State College in 1974 with a B.S. Ed. in Industrial Arts. He began his teaching career at Paden City this year, teaching the courses in Production and Transportation Technologies.

Debbie Whalcy graduated from Glenville State College in 1974 majoring in Art Education. She has an excellent background in painting and drawing and has really developed a quality program in art at the seventh and eighth grade plus at the Senior High level.

Thelma Sine graduated from Fairmont State College in 1944. She has taught Home Economics in Wetzel County spending nine years teaching at Valley High School and twenty-two years at Paden City High. In her thirty-one years of teaching she has gained expertise in all aspects of Home Economics.

Kutch McAttee graduated from West Virginia University in 1974 majoring in Music Education. He was responsible this year for the seventh and eighth grade music portion of Technological Man.

D. The Students:

The students at Paden City are very typical of students who have come from suburban middle class backgrounds. They are friendly, courteous, and seem very much involved in their educational pursuits, both academically and athletically. Variety in course offerings has been limited in the past to general shop, woodworking, and drawing. Through the efforts of "Project Open", new horizons are being opened to the total student population at Paden City. The response has been most gratifying.

II. Purpose of the Project:

The purpose of "Project Open" is to open up opportunities for young people to understand the highly complex technological world in which we live. Focusing attention on industrial arts (7-12), art (7 & 8), home economics (7 & 8), and music (7 & 8), the curriculum is being updated and tested in an effort to serve the needs of the community and its students. The results of the updating and testing are to be organized into an unified and relevant "living curriculum" in industrial arts, home economics, art, and music for county wide adoption.

The project also serves a second need for Wetzel County. The information gathered together through curriculum development efforts at Hundred and Paden City will be of great value when the county begins its building program. Regardless of which buildings may be replaced, the improvements being made today are a worthwhile investment for tomorrow. The adoption of a unified curriculum plan will assure equal and quality education for all the students in Wetzel County.

A. Community and Student Needs:

The community of Paden City is typical of many suburban towns. Most of the basic services can be found in Paden City, but gainful employment, higher education, or special and emergency services must be sought from the surrounding larger cities and towns.

Therefore, it is imperative that the programs being offered to the students not only reflect community living, but also a broader awareness and understanding of what is available and is expected of them outside the community. The program must also be built upon the assumption that we are in our era of change and diversity due to our technological advancements and that we must design programs to prepare the students to live in a technological world.

The philosophical foundation of the "Project Open" program at Paden City, is based upon the recognition of the continuous state of change in the nature of technology, and the knowledge that this state of fluxis constantly creating social and cultural changes in employment, life styles, values, and beliefs. The industrial arts staff and the consultant being cognizant of these facts have, and will continue to, develop a program of studies which reflects the importance of understanding the relationships between, implications of, and principles involving past, present, and future developments of a technological and industrial society.

B. Short Range Objectives:

The immediate objectives are concerned with updating the industrial arts curriculum (9-12), and to develop a unified approach to technology program (7-8) which reflects the highly industrialized technological society in which we live. The development of pilot courses based on learning concepts derived from industry, technology, and the humanities, are tested, revised and re-tested over a three year period in an effort to compile a living and relevant curriculum guide for county-wide implementation.

In the process of developing the new industrial arts and seventh and eighth grade curricula,inservice training is being provided to Gary Witschey, Gerry Bissett, Debbie Whaley, Thelma Sine, and Forest McAttee, which is designed to keep them involved and active in course revision. The results will allow them to continue updating curriculum after the consultant has completed the initial work.

Physical facilities are also revised to allow new activities to be introduced. New activities reinforce the concepts being taught in the newly developed laboratories. A major setback in physical facilities revision occurred because of the fire (art & home economics rooms were completely destroyed) but this situation will be taken care of during the 75/76 school year.

All short range objectives for the 1974/75 school year have been met or surpassed.

The identified objectives were:

1. To set up an advisory committee.
2. To revise and organize laboratory facilities.
3. To develop and evaluate course outlines of pilot courses for 74/75 school year.
4. To design and develop course offerings for the 75/76 school year.
5. To conduct 1 hour per week of inservice training to each industrial arts staff member.
6. To conduct group inservice training to each member of the seventh and eighth grade program once a month.
7. To research available industrial arts programs for use in modification at Paden City.
8. To Gant out an overall plan for the project.
9. To develop and follow Gant charts for conceptual based learning courses.

C. Long Range Objectives:

The long range objectives are designed to further update industrial arts at Paden City to reflect technology and its relationship to man and his society. A secondary long range objective is to investigate and develop a unified curriculum involving industrial arts, home economics, art, and music at the seventh grade level based on the study of technology. This latter objective has been curtailed somewhat because of the fire which destroyed part of the high school.

Courses at Paden City in industrial arts have two major thrusts. The first phase updates courses to present day practices. The second phase reflects the technology in the real world today and tomorrow. They also concern the human as well as the mechanical aspect of the technologies.

The following identified long range objectives are being met by Project

Open at Paden City High School:

1. To design, implement and evaluate an overall industrial arts curriculum which will prepare students at Paden City High School with the necessary tools to understand, utilize, and contribute to our technology society in which they live.
2. To develop a program of studies which reflects the importance of understanding the relationships, between, implications of, and principles involving past, present, and future developments of a technological and industrial society.
3. To develop a program of studies based upon the recognition that our society is in a constant state of flux due to the nature of technology, and that this state of flux is constantly creating social and cultural changes in employment, life styles, educations, values, and beliefs.
4. To review and revise content and structure of industrial arts courses offered at Paden City.
5. To provide resources, needed to design and implement a coordinated and updated curriculum.
6. To design and implement a model for curriculum development consultation and to evaluate its effectiveness.
7. To make Paden City High School self-supportive in curriculum development and implementation in three years.
8. To offer more options at less cost in industrial arts.
9. To provide inservice training to staff at Paden City in curriculum revision and implementation of that curriculum, i.e., course outlines, activities, materials and supplies, resource use, plant facilities and teaching methods.
10. To package and print an overall curriculum outline for Paden City.

D. County Coordinated Curriculum:

The county, in an effort to improve industrial arts to help meet the needs of its students, has several expectations and requirements.

A) In an effort to determine needs and solutions, pilot courses are being implemented and evaluated at Hundred and Paden City High for a three year period. B) Starting in September, 1975, another set of pilot courses will be implemented and evaluated at Valley and Magnolia High.

In the process of testing new industrial arts courses, many improvements are being made: a) physical facilities are being updated and expanded, b) teachers are involved in an organized inservice program in curriculum, c) students are receiving relevant instruction, and d) the county is developing a coordinated curriculum and a battery of information which will result in better facility planning and use in the future building programs.

All consultants in the county will develop a written curriculum guide during the next three year period. The consultants will be coordinated at the University level by Dr. David McCrory, Director of Technology Education Field Services, and at the county level by Jack Dulaney, Superintendent of Schools.

E. County Rationales, Goals, and Objecitves for Communication, Production, and Transportation:

On April 16, 1975 the consultant arranged the first of a series of county-wide inservice nights dealing with the formulation of a county rationale, goals, and objectives for communication, production, and transportation in industrial arts. All county industrial arts teachers were invited and attendance at each meeting well represented the department. The April 16th meeting was devoted to communication; the June 17th meeting to production; the June 24th meeting was devoted to transportation.

The results are as follows:

Communications Rationale

We believe that Wetzel County is a microcosm of the world at large; that its students' need for communication skills in comparable to that of any community, whether large or small; that a knowledge of the technical aspects of communication systems will lead to an understanding of the roles of the media in a technological society; and that the teacher, as a manager, provide the student with both simulated and authentic experience in the skills and techniques of communication. It is through these experiences that the student will become a discerning member of society.

Production Rationale

We believe that production is the basis for man's survival. With this in mind, it is important for us to give the student an awareness of the technical, social, cultural, economical, organizational, and ecological aspects of production; so they will understand the affects of production in our technological society. The teachers should provide authentic and simulated experiences in the areas of production. This will bring about insights and realizations of the theory, concepts, and skills in the extraction, manufacturing, construction, recycling, and services, utilized by the production industries. Through these experiences the students should become better consumers of technology and contributing members of society.

Transportation Rationale

We believe that the study of transportation is divided into two major areas of concentration:

The first is the investigation and development of the student's awareness to the many types of energy utilized by man, how they are converted into work, and the implications and effects of such conversion upon man and his environment.

The second is an investigation of the various systems of **terrestrial**, atmospheric, space, and marine transportation. These systems related to the movement of man and materials should be explored by students in both synthetic and authentic situations.

Coupled with these two major concepts is the study of future energy and transportation technology which will be encountered by the students during their lives.

Major Objectives for Communication, Production, and Transportation

Goals/Objectives:

1. The student will be able to gain an awareness of production, transportation and communication processes.
2. The student will be able to understand the different techniques used in production, transportation and communication.
3. The student will be able to gain an awareness of the effects of production, transportation and communication on man and society.
4. The student will be able to gain an understanding of the future roles of production, transportation and communication in society.
5. The student will be able to understand the history and development of production, transportation and communication.
6. The student will be able to gain specific skills in production, transportation and communication systems.
7. The student will be able to understand man's need and desire to produce transport and communicate effectively.
8. The student will be able to develop individual values so that he will become a discerning member of a technological society.
9. The student will be able to develop leisure use of his production, transportation, and communication skills.
10. The student will be aware of possible career opportunities in the areas of production, transportation and communication.

F. List of 1974-75 Course Description:

There were two pilot courses offered at the senior high level during the past school year. One in communications, and the other in transportation. Another pilot was developed and implemented in the seventh and eighth grades involving industrial arts, home economics ,art, and music.

Course Descriptions:

VISUAL COMMUNICATION (9 - 12, two sections)

This course is an introduction into visual communications technology. It will identify the development of communication systems and processes, mans' need and desire to communicate, and the effect it has on our society. Students will be exposed to areas of offset lithography, image assembly, layout and design, and black and white photography.

TRANSPORTATION (9 - 12, two sections)

This course is divided into three major areas of study. The first consists of identifying what energy systems are, how and why they have been developed, and how they are used and misused by man. The student will apply this knowledge by selecting an energy system, or creating one of his own, and construct a working scale model.

The second part consists of the study and operation of two and four cycle gasoline engines. There will be emphasis placed on the measuring and analysis of pollution emitted from these power sources, and a look into the future alternative of engines.

The third area will investigate the past, present, and possible future transportation systems on land, water, and in the air. Each student will be required to develop a transportation system and build a scale working model.

TECHNOLOGICAL MAN (7 & 8)

This course is a required subject for all seventh and eighth grade boys and girls. It is an introduction into the study of four areas. Each nine weeks the students flow through, industrial arts, home economics, art, and music. It is an approach to study technology in a unified manner.

III. Major Accomplishments:

The major accomplishments of the 1974-75 school year centers around four major areas; inservice training, course design and implementation, physical facility modification, and formation of an industrial arts club. Each area required total support of the teachers and in many instances the support and energies of the students.

A. Inservice Training:

In August the consultant met for the first time with both industrial arts teachers to discuss the two pilot courses to be offered the coming year. Plans were then made to set up a schedule to allow for the development of each of these courses. By the time school had started each of the courses, visual communications and transportation had been designed and ready for implementation.

Technological Man, the seventh and eighth grade courses, did not begin its development until the week before the students were ready to report. It was at this time a county workshop was held for all the teachers who were going to participate in unified arts at the four junior/senior high schools. The TPTT staff organized and presented this workshop to the teachers. It was an attempt at answering some of the questions on what the study of technology is all about, what is meant by unified arts and a unified curriculum, and to design and implement a unified curriculum, and finally, examples were given on some programs that are ongoing throughout the nation.

The next few days the consultant along with the group of teachers from Paden City, started to develop the curriculum for each area. The teachers felt that they could not unify immediately because of the different locations of each area throughout the building. Each teacher designed a nine week course in their respective areas. At the end of the first nine weeks the consultant held an inservice night and discussed each of their curriculums. It was found that each of their courses did have many commonalities between them, and they decided that they could and would make an attempt at unifying in theme and content.

During the planning of the unified curriculum for the second half of the year, the fire destroyed the academic wing of the high school. The unified approach had to be put in limbo for the time being because of the community locations of the different areas.

During the later half of the school year Gerry Bissett and Debbie Whaley began to design a unified curriculum between industrial arts and art. It is a study of craft industries and will be instituted in the 75/76 school year eighth grade program. Themla Sine, the home economics teacher, has also designed a unifying approach with Mrs. Whaley, the art teacher for the upcoming year at the seventh grade level.

Also during the year Gary Witchey and Gerry Bissett participated in inservice training by going with the consultants to the Government Surplus Center in Dunbar, West Virginia. Here the teachers found how they could obtain and utilize much of the equipment and materials cast off by the government in their labs at very little expense. One major item was procurred was a Multi 1250 offset press for fifty dollars. With about two days of cleaning and minor adjustments the press produced clean, quality copies. The machine if bought new would cost almost seven thousand dollars.

Another major accomplishment was the teachers involved in "Project Open" began to develop a course in Visual Thinking and Illustration to be offered at Hundred High. This was done on scheduled inservice nights by the consultants and led to an excellent exchange of ideas.

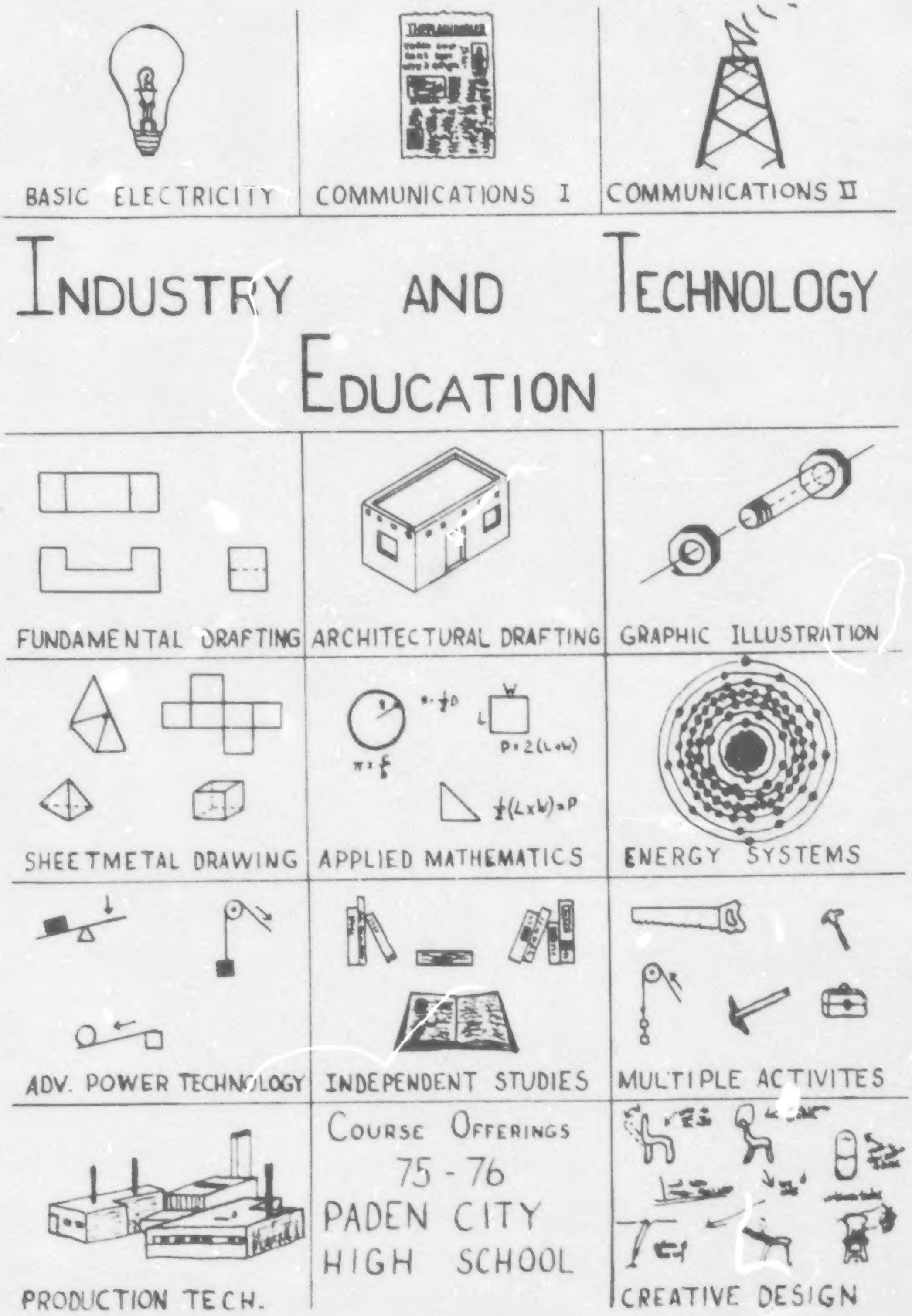
Also for the first time, all the industrial arts teachers in the county participated in three inservice nights. The purpose of these meetings was to reach concensus on what is to be taught in Wetzel County and to develop a rational and set of goals for the county curriculum. So far three rationales in Communication, Transportation, and Production have been designed. Accompanying these are a list of goals and courses headings for the county.

The teachers felt they would like for these meetings to continue in the future. They felt it necessary for course development and that these meetings offered an excellent opportunity for the exchange of ideas.

B. Course Design and Implementation:

Starting in November Gary Witschey, Gerry Bissett, and the consultant started to redesign the program of studies in industrial arts. Identification of courses to be taught, course descriptions, rationales, and objectives for each course, content and activities, and materials and equipment for each course has been an on going process for the last six months. This summer the consultant will meet with the teachers and finalize all courses. A total of eleven new courses plus the revised pilot courses will be offered during the 1975/76 school year. The projected enrollment in industrial arts is expected to rise to over 440. Thus servicing 74% of the population at Paden City High School. Each course is to be a semester in length and some courses are to be run twice.

The following list of courses were listed in this brochure and passed out to the students.



BASIC ELECTRICITY
COMMUNICATIONS I
COMMUNICATIONS II

INDUSTRY AND TECHNOLOGY EDUCATION

FUNDAMENTAL DRAFTING
ARCHITECTURAL DRAFTING
GRAPHIC ILLUSTRATION
SHEETMETAL DRAWING
APPLIED MATHEMATICS
ENERGY SYSTEMS
ADV. POWER TECHNOLOGY
INDEPENDENT STUDIES
MULTIPLE ACTIVITES
PRODUCTION TECH.

COURSE OFFERINGS
75 - 76
PADEN CITY
HIGH SCHOOL

CREATIVE DESIGN

FRONT COVER ILLUSTRATED
by KAREN SUTER and JAMES MARS

Courses Being Offered Both 1st and 2nd Semester

COMMUNICATION I
VISUAL COMMUNICATION (9 - 12)

This course is an introduction into visual communications technology. It will identify the development of communication systems and processes, mans' need and desire to communicate, and the effect it has on our society. Students will be exposed to areas of offset lithography, image assembly, layout and design, and black and white photography.

COMMUNICATION II
AUDIO/VISUAL COMMUNICATION (9 - 12)

Emphasis in this course will focus on audio (radio) and audio-visual (television) communications systems. The student will study the development of each area, the implications they have had for society, and future developments in each areas. The student will actually work with the equipment, and will be responsible for several productions.
PRE-REQUISITE: COMMUNICATION I

DRAFTING AND DESIGN (9 - 12)

This is a basic course for the student taking drawing for the first time. It enables the student to gain a reasonable proficiency in draftmanship, lettering, and sketching and knowledge of projection techniques, graphic construction, and symbols. With this information, the student will become proficient in reading graphic language and interpreting the ideas others have expressed through drawing.

POWER TECHNOLOGY
ENERGY SYSTEMS (10 - 12)

This course is divided into two areas of study. The first consists of identifying what energy systems are, how and why they have developed, and how they are used and misused by man. The student will apply this knowledge by selecting an energy system, or creating one of his own, and construct a working scale model.

The second part consists of study of the operation and maintenance of two and four cycle gasoline engines. There will be emphasis placed on the measuring and analysis of pollution emitted from these power courses, and a look into the future alternatives for engines.

MULTIPLE ACTIVITIES
MULTIPLE PROCESSING (9 - 12)

This course gives the student a chance to explore the various types of materials and processes of industry, such as metalworking, woodworking, graphic arts, plastics, electricity, and power.

Courses Being Offered 1st Semester Only

ARCHITECTURAL AND STRUCTURAL DRAWING (9 - 12)

Students in this class become familiar with the nomography and nomenclature of architecture. Past, present, and future trends in architectural construction, and environmental planning will be studied. Students are given the opportunity to design a residence/structure/city or an alternative.
PRE-REQUISITE: DRAFTING AND DESIGN or MECHANICAL DRAWING I

MIT (Mathematics in the Technologies) (9 - 12)

Students are given the opportunity to see mathematics directly applied to the technology of the times. This class looks at the practical side of mathematics. Contents: metrics and conversion, framing square, micrometers, and computations for the construction, production, and power industries.

MACHINE AND SHEET METAL DESIGN (10 - 12)

This course explores drafting as it is applied to the sheet metal and production industries. Contents covered are: intersections and developments, geometric constructions, machine design, symbols for welding, production drawing, gears, threads and other fasteners.

INDEPENDENT STUDIES (11 - 12)

This is a pre-arranged and team taught course by Mr. Witschey and Mr. Bissett. Students taking this course are given the opportunity to further their investigations into and knowledge of any technological area of their choosing.

Students interested in selecting this course must set up an appointment with either of the instructors prior to registration to discuss their ideas and proposals for the course.

Courses Being Offered 2nd Semester Only

BASIC ELECTRICITY AND ELECTRONICS (9 - 12)

This course will give the student a basic knowledge in the area of alternating and direct current electricity. Students will also study circuitry and power/load relationships.

CREATIVE DESIGN (9 - 12)

This is a problem solving course in which the students are given the charge of developing ideas and concepts they may have about materials and products which surround them. It involves researching, developing, analyzing, testing, and evaluating materials, problem solving, drawing, and the construction of a prototype.

PRE-REQUISITE: DRAFTING AND DESIGN or MECHANICAL DRAWING I

MASS PRODUCTION TECHNOLOGY (10 - 12)

This course is designed to allow the student the opportunity to see industry at work. Through field visitations to the local industries, the students will investigate the essential elements of the organization and techniques of mass production.

The student will also be responsible for the organizing of their own industry and mass producing a salable product.

GRAPHIC ILLUSTRATION (10 - 12)

This is an in depth study into illustrating for advertising and technical application. Contents: image assembly, design principles, layout, sketching and shading, color development, and technical assembly drawing.

PRE-REQUISITE: DRAFTING AND DESIGN or MECHANICAL DRAWING I

TRANSPORTATION
POWER TECHNOLOGY

The students will investigate the past, present, and possible future transportation systems on land, water, and in the air. The reasons for the development of these systems and their implications for society will be researched and studied. Each student will be required to develop a transportation system and build a scale working model, or develop an alternative idea.

C. Physical Facility Modification:

The physical facilities at Paden City has undergone a complete totally different look. Gerry Bissett and Gary Witschey, along with their students, refurbished the production/transportation lab beginning in November.

It started by painting the walls in two very pleasing colors. Over Christmas vacation the floor was painted a battleship gray. The major shop equipment was rearranged along with a new tool crib being built by the teachers. This tool crib cost about $70.00 for materials, compared to about $450 for a commercial unit of comparable quality.

The communications laboratory began to take on a new look before school even started. Both Gerry and Gary worked nights and weekends to build the darkroom at the rear of the classroom. Two major problems have to be solved by next year. First, a rear exit has to be installed in the communications laboratory to meet fire regulations. Second, a water/drainage pipe must be installed in the darkroom. Both of these times were requested by Mr. Witschey at the end of the 1973 school year.

In order to utilize the darkroom this year, Mr. Witschey installed a temporary water and sewage system. A very unique set up, involving a 55 gal. drum, an air compressor, and several feet of rubber hose and plastic pipe.

During the last few weeks of school, Mr. Witshcey and his students finished painting the walls in the communications laboratory. Also added to the lab was a small area adjoining the darkroom for the housing of the technology library and reference center.

D. Industrial Arts Club:

A student industrial arts club was formed this year by the students at Paden City. A constitution was drawn up, election of officers, and affilation with the national student Industrial Arts Association begain in January.

The purpose of the club was and still is to start making weekend or during the week (over vacation) trips to the local and distant industries around Paden City. The students, by doing this, felt they would gain a better understanding of how industry operates and the ways different products are manufactured. It was also planned to allow them to see other parts of the county.

They ran two money making schemes. The first was the sale of a twenty-five dollar bond. The second was the sale of green and white hand made but mass produced beanies. These beanies were to be worn to the state basketball finals in Charlestown. Even though Paden City didn't end up in the finals, the club sold over 125 beanies at fifty cents each.

At the end of the school year the club budget had assets of over sixty dollars. That really wasn't enough to take a trip for the thirty members. They voted to save the money for next year and to start early in September.

VI. Evaluation:

The evaluation of "Project Open" at Paden City has been on going throughout the year by the consultants from both Paden City and Hundred. Above and beyond this, the University Advisory Committee, consisting of Dr. Donald Lauda, and Dr. David McCrory, have made four separate field evaluation visitations offering their comments and suggestions in writing after each visit. Another key person who participated in "outside" evaluation was James Snyder, the State Specialist in Industrial Arts.

But, the key people who offer the most important evaluations are the teachers who are involved in the project. Their perceptions, recommendations, conclusions, are the most critical in terms of measuring any success over the past year.

See Enclosed Evaluation Reports p. 21-26

TO: Dr. David L. McCrory

FROM: Gary Witschey

DATE: June 28, 1975

SUBJECT: Project Open - Paden City - Teacher's Progress Report

I approached the 1974-75 school year with some apprehension. At the beginning of that school year I felt as though I was being pushed into a type of situation over which I would have very little or no control. It has been just the opposite.

Through cooperation with those involved, we have been able to initiate and implement into our programs new concepts and techniques of directly relating technology to society.

The programs of the past year have opened and broadened the minds of several students at Paden City High School. It has allowed many, who otherwise might not have had an opportunity to become involved, and to benefit from the various phases of industrial arts.

Next year, the 1975-76 year promises to be even better with the implementation of the new courses developed for next year.

I would like to thank Frank Trocki for the many hours he has spent for the betterment of the program. Although there were times we didn't agree in terms of some of the directions which were being taken, we were able to sit down and discuss our differences and usually came up with what proved to be best for our situation. Frank's criticisms and remarks have been a considerable advantage to use.

Through Project Open at Paden City High School we have been able to put on a new face as far as industrial arts is concerned. All involved teachers, students and administration, have profited greatly from the participation in this project. I am extremely well pleased with what has taken place this past year. Project Open, not only for Paden City High School but for the other schools as well, has aided in developing good rapport between the teaching staff and the administrative staff of Wetzel County and with the Wetzel County Board of Education.

I am very much looking forward to the beginning of the 1975-76 school year and hoping that it will be as fruitful as the past year has been.

TO: Dr. David L. McCrory

FROM: Gerry Bissett

DATE: June 25, 1975

SUBJECT: Project Open - Paden City - Teacher's Progress Report

During the past school year I have benefited not only from the fact that I have gained experiences as a first year teacher but also from the fact that I was part of "Project Open" at Paden City High School. I feel that I have developed the ability, with the aid of the consultant, and Gary Witschey, to organize and develop curriculum, and to relate the course content to the outside world.

Although I think there was much to learn this year, there were many improvements made during the past year. First the appearance and organization of the physical facility has improved immensely. A resource library has been organized, and a complete "new" curriculum has been developed for the coming year.

Without "Project Open" at Paden City High School during the 1974-1975 school year the concept of a traditional Industrial Arts program would still be in operation.

TO: Dr. David L. McCrory

FROM: Thema Sine

DATE: June 30, 1975

SUBJECT: Project Open - Paden City - Teacher's Progress Report

Initially, during the first year of unified arts inclusion in the teaching curriculum, it was felt that the teaching block increments were too abreviated in exposure time. However, with experience gained through teaching early sections, a pattern of activities and student participation developed which permitted sufficient exposure to attain the objectives of the program.

The teacher becomes more involved in materials planning to insure adequate supplies and that each student has the necessary activity items. This is the result of more students being exposed to the subject than would be experienced in the conventional curriculum planning.

Professionally, I have found through unified arts teaching considerable personal satisfaction as a teacher in reaching and working closely with many students that otherwise I would not have worked with or have been able to involve in the subject activities. I feel the program is very worthwhile and would like to see it continue as part of my professional life.

TO: Dr. David L. McCrory

FROM: Debbie Whaley

DATE: June 30, 1975

SUBJECT: Project Open - Paden City - Teacher's Progress Report

The arts section of the Unified Arts Program has given the students more insight into their surroundings. The purpose of the course, I felt, was not only to give them a few basics, but to also show how important creativity is to the individual.

The course projects went very well, although there had to be adjustments made after the fire. I did find, however, that I had over-rated the time capacity and we usually did not complete the last section in the course plans. But, in my opinion, that's better than having too little planned. In order to continue and expand on the prospects of applied arts an almost constant resource is necessary; I feel that you have to keep adding to the materials you already have.

As for the classes themselves, I always felt that I accomplished more with the seventh grade. Maybe it was the time factor with the eighth grade (after lunch), I don't know --they always were a little more difficult.

Paden City High School

IRA R. SATTERFIELD, PRIN.

PADEN CITY, W. VA. 26159

June 25,1975

TO WHOM IT MAY CONCERN:

During the past school year I have observed a significant change in the Industrial Arts program at this school, due primarily to new concepts incorporated under "Project Open."

Student interest has grown as the program emphasis has been shifted to communications and technological concepts. Change, however, has not been wholesale, as we retained our shop and mechanical drawing classes.

We also added a program of unified arts for seventh and eighth grades. This has provided an introduction to art, home economics, music and industrial arts for the students at this level.

I feel that the program has been an unqualified success. The reasons are, in my opinion, the addition of another instructor, the support of the Wetzel County Superintendent of Schools and Board of Education, and the consultant services provided by West Virginia University.

Ira R. Satterfield

Ira R. Satterfield
Principal

TO: Dr. David L. McCrory

FROM: Frank R. Trocki

DATE: June 25, 1975

SUBJECT: Consultant's Progress Report - Paden City High

During the year the progress of Paden City's involvement in Project Open has been evaluated by both internal and external observers. Each report has stated that there has been growth and improvements in curriculum development and implementation, physical facilities, and student interest.

The only thing that the consultant can add to these evaluation is that this improvement and growth could only have been achieved by the teacher's desires to upgrade their program and their dedication to their profession and to the learner. Without their cooperation and determination to change their present traditional Industrial Arts program to an innovative Industrial Arts curriculum based on the study of technology, the fantastic results in each of the major areas of construction would have not been achieved.

I must also acknowledge the cooperative involvement and support by the administration. Without their backing the success of the project would have fallen short of the consultant's expectations.

4. Student Sign Up:

As of this writing it was not possible to include information on this topic. It will be included in next years evaluation. The consultant assures a much higher student involvement next year. The projected enrollment should be in the vicinity of 440. With this figure the Industrial Arts Teachers will be serving of 74% of the student population.

B. External Evaluation:

State Supervisor
Field Coordinator
Field Liaison

See Enclosed pages (28-36)

V. Future Progress:

A. 1975-1976 Course Descriptions:

See section III item B for the course description.

B. Expansion to Valley and Magnolia:

During the spring of each year the consultants and teachers involved in "Project Open" have presented a visual progress report to the Board of Education. This year the review also included some students who demonstrated their projects developed from the Power Technology and Communications courses offered at Paden City High School.

The Superintendent has traditionally recommended continuation of present contracts and expansion according to his overall curriculum plan during this review meeting. He did so this year and suggested to the Board that another consultant be contracted for curriculum work at Magnolia High School. The Board agreed and further suggested to the Superintendent that he look into the possibility of also contracting a fourth consultant to begin curriculum work at Valley High School. Therefore, the 1975-1976 school year will find all four Junior/Senior High Schools included in the "Project Open" effort towards a county wide curriculum.

State of West Virginia
Department of Education
Charleston
25305

DANIEL B. TAYLOR
STATE SUPERINTENDENT
OF SCHOOLS

MEMORANDUM

TO: Frank Trocki

FROM: Fames F. Snyder, Curriculum Specialists, Industrial Arts

SUBJECT: Year End Evaluation, Paden City High School, Project Open

DATE: June 24, 1975

The Industry and Technology Education program at Paden City High School has expanded 100% during the school year 1974-75. The major contributor has been the addition of a second teacher to the staff. Additional expansion is evidenced by the offering of a more broad curriculum of Industrial Arts and more students requesting Industrial Arts courses.

The committment of the staff is in evidence by physical changes in the laboratories and the developing curriculum. The laboratories are being painted and altered reflecting the needs of the new program. The addition of a graphic's laboratory will greatly expand the communications program. The addition of Power Technology, Mathematics and the Technologies, Audio/Visual Communications, Basic Electricity and Electronics, and Independent Studies truly reflects the intense growth of Industrial Arts at Paden City.

The complete endorsement by the Wetzel County Board of Education, Administrative staff and the Principal indicates the positive feeling for the progress that has taken place this first year of Project Open at Paden City High School.

Jerry Bissett and Gary Witschey have developed many good ideas this past year. I feel these men have grown personally through their involvement in the program.

Under the guidance of Frank Trocki, I feel the project is progressing well and expect to witness numerous other developments during the next school year.

JS/js

West Virginia
University

MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Industrial Arts Education

October 16, 1974

Technology Teacher Center
2925 University Avenue

Mr. Frank Trocki
Training Associate
2925 University Avenue

Dear Frank:

I am pleased that you have agreed to participate Wednesday, October 23 in a strategy session on evaluation of field projects in curriculum development. The session will be held from 1:30 to 3:00 in room 802b, Allen Hall.

Several CHRE faculty members will be in attendance, along with Technology Education doctoral students involved in field projects. The purpose of the session will be to explore methods which might be used to assess progress in:
a) curriculum development,
b) teacher effectiveness, and
c) student progress.

I look forward to a productive meeting.

Sincerely,

Don

David L. McCrory
Assistant Professor

DLM/dh

West Virginia
University

MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Industrial Arts Education

November 13, 1974

TO: Frank Trocki
FROM: D. McCrory
RE: Observation of Project Open at Paden City High School

I am pleased to have had the opportunity on November 6 to visit the Project Open operation at Paden City. I noticed that a great deal of progress has been made since my previous visit there.

The interest of the teachers, Gerry and Gary, was quite evident. If the kids I observed in the power class are typical of others, then I would say that the students are responding to the leadership of the teachers, who are, in turn, responding to your efforts as a consultant.

Among the major changes to the facility, I was most impressed with the amount of work the teachers have put into painting and organizing the laboratory. With the completion of the graphic arts area, the Paden City industrial arts facility should be capable of supporting a wide range of instructional activities.

I would caution you, though, about letting Gary get too involved with that old offset press. It could become an all-consuming task which might draw off teacher energies best used for improving the overall experiences of the students.

The visit to Paden City reinforced my feeling that we made the right choice in asking you to tackle the Project Open task. You can rightfully take credit for quickly stepping into a demanding position and making the best of it.

Keep up the good work.

West Virginia University
MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Technology Education Program

November 13, 1974

TO: Gary Witschey and Gerry Bisset

FROM: D. McCrory DAM

RE: Observation of Project Open at Paden City High School

I am addressing this note to the two of you as a team, because I am fully aware that it takes teamwork to accomplish all that you have done in a few short months.

In a short visit such as mine, one always risks missing some obviously good things that are happening, but I will mention a few points which stick in my mind.

The facility looks much more organized and useful than when I saw it this summer. I know you have put a lot of work into it. When the photo-reproduction is in full operation, you should be able to open up a whole new set of experiences for the kids.

Gary, you are to be complimented on the direction you are going with the graphic communications class. There is so much more to it than simply mechanical drafting. I hope you can get some more lighting in that room, though, to improve the aesthetics of the room and the efficiency of the students. It seems a bit drab right now (or maybe I was sleepy).

Gerry, keep challenging the students to research and development on theirs and others ideas. I am convinced it is a valuable method of learning. Don't be too frustrated if some of the kids don't seem to get into the R & D approach as quickly as others. Your classes may be the first opportunity for them to develop their own ideas. That can be scary for one who has always been told exactly what to do and when to do it. It is a hard line to hold between a totally teacher directed approach and one that is totally student directed.

In short, keep up the good work. You both are doing a fine job under limitations of budget and facilities.

West Virginia University
MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Technology Education Program

MEMORANDUM

TO: Frank Trocki

FROM D. McCrory, Coordinator of Field Studies

RE: Project Open Evaluation (Paden City High School)

INFO: Mr. Bissett, Mr. Witschey

DATE: May 22, 1975

On Monday, May 19, I visited Paden City High School for the purpose of evaluating the progress of Project Open there. I am pleased to report that I am impressed with the progress that is observable after only one year of the project.

Mr. Bissett and Mr. Witschey seem to be making great progress with their new courses and both indicated they were strongly looking forward to more changes next year. They are planning, I understand, to spend several days of their own time working after school is out. That is an excellent sign that you have established a climate of change.

The graphics classes are looking better. Now that the photo darkroom is completed, a whole new set of activities is open to the students.

The power and transportation activities have obviously "turned on" many kids, also.

In summary, I congratulate you and the teachers for doing a fine job this year, and I wish you well in 1976.

West Virginia University
MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Technology Education Program

M E M O R A N D U M

TO: Mr. Frank Trocki
Training Associate
Paden City

FROM: Donald P. Lauda
Faculty Liaison

RE: Field Visitations
(September 23 and October 16, 1974)

DATE: November 6, 1974

It was a pleasure to visit at the Paden City High School on the dates indicated above. These visits were most revealing and hopefully we can arrange for these at least every other month.

As you may recall we also visited the school this past summer and found it to be in dire need of cleaning and rearranging. On the 23rd of September the changes in evidence were phenomenal. Of course, by October 16th the laboratory was much further along. The new paint, proposed tool racks, and classroom area in the comprehensive lab has made quite an impact. At the same time the construction of the dark room has progressed satisfactorily and will be a welcome addition to the program. Both instructors and yourself should be commended for these efforts.

Directly related to labs and classroom space I would suggest that you work closely with Jack Dulaney to have the laboratory floor painted with safety lanes and lower the ceiling to eliminate the noise problem from the gym. At the same time you should assist the art teacher as she rennovates her classroom. Jack Dulaney has indicated that they intend to re-do that room. It appears to me that the art teacher is in need of shelving, storage cabinets, easels, etc. The home economics teacher's room is so full of tables, chairs, etc. that it must be difficult to handle a class over ten. Although I doubt she will alter the room, consideration should be given to next year after she retires.

Of course most importantly is the curriculum that has been developed at Paden City. The courses which I have been able to observe were excellent. The content appears to be highly relevant and obviously has the students involved and highly motivated. Most industrial arts teachers would be very frustrated with this new content but the two teachers at Paden City seem to be handling it very well. I feel that much of this success can be attributed to the in-service program you have implemented and the semi-weekly visits you make to the school.

At this stage I only have a few recommendations to make for these classes besides the physical changes already mentioned. Number one, you might want to consider generating a book shelf for use in each classroom or laboratory. After checking the school library I feel you need to order a whole set of materials which will be relevant to the student's work. You might want to check with Loy Stull since he is generating such a library at Hundred. Number two, you should see that the students have the materials they need at their disposal. This seems especially critical in R & D work. For example, students at this time could use small gears, wire, etc. I am sure that you can find this type of material at the surplus store. Number three, it appears that your teachers may need assistance with interpreting many of the concepts evidenced in the R & D work. For example, gear ratios, leverage, and solar energy.

All in all Frank I would like to commend you for accepting this responsibility and carrying it out meticulously and logically. This does not mean that the job is complete. Revisions to all classes will always be a necessity as you well know. Consideration should also be given to evaluation at Paden City. We might want to consider several attitudinal tests available, or we may want to generate our own technological literacy test. Sounds like a great dissertation topic. We might also generate a masters program for your teachers based on these ideas.

Keep up the good work.

DPL/fb

CC: Dr. DeVore
Dr. McCrory
Mr. Snyder

West Virginia
University
MORGANTOWN, WEST VIRGINIA 26506

College of Human Resources and Education
Technology Education Program

June 24, 1975

Mr. Frank Trocki, Consultant
Wetzel County
Technology Ed. Teacher Ctr.
2925 University Avenue
West Virginia University
Morgantown, WV 26506

Dear Mr. Trocki:

As liaison person between the Technology Education Program and the project at Paden City High School I am submitting my evaluation of the 1974-75 school year. This evaluation represents my views which are based on personal visits to the school and meeting with you and other persons directly or indirectly related with Project Open.

EVALUATION OF 1974-75 SCHOOL YEAR

The project at Paden City High School has been most productive throughout its first year. Dramatic changes have taken place in facility rennovation, curriculum change, in-service education and, in my opinion, in the attitude of students towards industrial arts. The consultant, teachers at Paden City, students, and all others concerned should be proud of these changes.

Although I expressed concern about the courses that were originally proposed I feel that subsequent changes were viable and workable in Paden City. They are a radical departure from previous efforts in the program. The areas of production, communication and transportation are being approached in a unique manner. The proof of the success of these classes lies with the excitement students are experiencing in the program. One only needs to walk into the laboratory to sense this feeling. The research and development activities that are being carried out in the classes represents a viable approach to technology education.

The unified arts effort received considerable attention due to its unique combination of disciplines. In retrospect I feel that the approach was viable and has merit for future efforts. The consultant is to be commended for his ability to "pull" the teachers together, to arrange for scheduling, etc.

The facility rennovation has been excellent. The change from September 1974 to June 1975 is phenomenal. The judgment used to improve the facility and purchase equipment has been of a very high caliber. The school has received a vast amount of tangibles at a very low cost but of greater merit is the use to which this is being utilized. Careful consideration has been given to purchasing equipment and supplies to support specific curricular goals. Although the fire that destroyed the major portion of the high school did not gut the technology laboratories it did raise havoc with schedules, etc. The program proceeded smoothly in spite of this which is a reflection on the professional attitude of all concerned.

The in-service work provided for the teachers at Paden City has been excellent. Each session has contributed to the growth of the teachers and the program design. I especially like the idea of working with other industrial arts teachers in the county in these sessions. Wetzel County will have a "total/viable" program in technology education as a result of such efforts.

I have no reservations about the program at Paden City High School. The second year is a critical one in Project Open since it really is the last year for major revisions if the third year is to become a year of transition. Careful consideration should be given to revising current offerings and constantly maintaining a balance between concepts in the technical and socio-cultural areas.

Sincerely,

D Lauda

Donald P. Lauda
Coordinator

DPL/fb

CC: Mr. Jack Dulaney
Dr. David McCrory

The new consultants have been secured by the University and will report for work beginning July 1, 1975.

Don Sheppard is from Illinois and is assigned to Magnolia High School. He has a B.S. Ed. and M. Ed. in industrial arts and has taught in public schools for several years. In addition, Don brings with him a unique background in training programs for industry. He will be working with Keith Ritz and George Marshall.

Fred Fox is from Austin, Texas and is assigned to Valley High School. He has a B.S. Ed. and M. S. Ed. in industrial arts and has taught in public schools for three years. Fred will be working with Bob Jones and a new teacher who will be hired this spring.

All four consultants and eight teachers will work together during the 1975-1976 school year to solve some county wide problems and begin the county curriculum plan.

B. County Wide Inservice:

In terms of county wide inservice, a series of three meetings were held this year to develop a rationale, goals, and objectives for the areas of Production, Communication, and Transportation. Next year these inservice meetings will continue on a monthly basis in an attempt to get consensus on county direction, style and format for the curriculum plan, and joint activities which may be shared. This additional inservice time will be provided at no additional costs to the county.

VII. Appendix:

A. Contract
B. Course Content Charts
C. Gant

WEST VIRGINIA BOARD OF REGENTS

West Virginia University
College of Human Resources and Education
Morgantown, West Virginia 26506

CURRICULUM DEVELOPMENT SERVICES AGREEMENT

TECHNOLOGY EDUCATION PROGRAM

WETZEL COUNTY, WEST VIRGINIA

December, 1973

The following agreement is between the Wetzel County Board of Education and the West Virginia Board of Regents, hereinafter referred to as "Board", acting for West Virginia University, hereinafter referred to as "University". The University, through its Technology Teacher Center, agrees to provide the following curriculum development services for Wetzel County, West Virginia for the period July 1, 1974 to June 30, 1975.

I. Purpose of the Agreement:

This Curriculum Development Services agreement is designed to provide the county with:

1. curriculum development in the technologies designed expressly for Wetzel County, and
2. professional development for Wetzel County teachers involved with the technologies curriculum.

The curriculum development program will be planned on a cooperative basis with Wetzel County in order to correlate with the County's comprehensive educational plan.

The University, through the Technology Teacher Center, will provide the County with consultant services for curriculum development in industrial arts. Training Associates will be assigned to the project, and will be supported by the staff and facilities of the Technology Teacher Center.

II. The Training Associate:

By mutual consent, the County and the University will identify qualified teacher/scholars for each consultant position identified on the budget page of this agreement. Training Associates will be engaged in graduate studies in the Technology Education Program at West Virginia University while providing an average of twenty man hours per week to the project. Qualifications of the Training Associate will be determined jointly by the County Superintendent's office and the Technology Teacher Center.

III. Supporting Services:

The University will provide, through the Technology Teacher Center, and the Curriculum Resource Center, support services for the curriculum development project. Support will be provided in the form of special-purpose consultants, and curricular/instructional resources as needed and requested by the Training Associate assigned to the project.

IV. Responsibilities of the Training Associate:

The Training Associate will:

1. plan a program of action leading to the design, development, implementation, and publication of an appropriate curriculum in industrial arts for the project school(s),
2. design and conduct an inservice education program for the industrial arts faculty in the project school (s),
3. provide ancillary services as required or requested for the success of the project,
4. develop and conduct an assessment of the project as the program proceeds, and
5. compile and distribute to County school officials the results of the project, including reports of the instructional design, implementation, and evaluation.

V. Responsibility of the County:

Wetzel County will:

1. provide instructional materials, devices, and other services required for the successful implementation of the program design at a level consistent with normal operation or as required for the new curriculum design,
2. assign a member of the Wetzel County Superintendent's staff to the project as a liaison with the Training Associates and the Technology Teacher Center at West Virginia University, and

3. secure the cooperation of all county personnel directly related to the project, including the Principal of the school(s) where the program will be implemented.

VI. Time Schedule:

The curriculum and development project is designed for a twelve (12) month time period beginning July 1, 1974 and terminating June 30, 1975. This schedule provides time for both preparation for and evaluation of the project.

VII. Termination of the Agreement:

West Virginia University and Wetzel County may terminate the agreement by mutual consent:

1. prior to contract implementation if personnel for the project are not secured by July 1, or

2. prior to completion of a full contract if both parties agree on a negotiated settlement.

CURRICULUM DEVELOPMENT SERVICES AGREEMENT

THIS AGREEMENT, made on the 14th day of March, 1974, by and between the Board of Education of the County of Wetzel hereinafter referred to as "Local Agency", and West Virginia Board of Regents, hereinafter referred to as "Board," acting for West Virginia University, hereinafter referred to as "University".

WITNESSTH THAT:

WHEREAS, the parties to this agreement have discussed the matter of the University furnishing certain services to the Local Agency, and, as a result of such discussions, the University has prepared and submitted to the Local Agency a proposal entitled "Curriculum Development Services Agreement - Technology Education Program" and bearing date December, 1974, hereinafter referred to as "Proposal".

NOW, THEREFORE, The Board, acting through the University hereby agrees to perform the services which are set forth in detail in said Proposal, a copy of which is attached to this agreement as part hereof, and to perform such services in the manner specified therein. The Board, acting through the University further agrees to complete the performance of such services as specified in the proposal schedule.

The Local Agency hereby agrees to pay the Board for its services in the amount and in the manner set forth in the budget provisions of said Proposal.

WITNESS the signatures of the duly authorized officers of the parties of this agreement.

____________________,	____________________,	____________________
President Board of Education County of Wetzel	Superintendent Wetzel County Schools	James G. Harlow President West Virginia University

Course Content
Charts

Paden City High School
1974-1976

ARCHITECTUAL AND STRUCTURAL DESIGN

GRADE 9-12

WEEK	DAY	CONTENT
		I. Architectural History A. Principal Styles 1. Egyptian, Assyrian, Persian 2. Greek 3. Byrantine, Romanesque 4. Gothic 5. Renaissance 6. Classical revival, electrisism 7. International, contemporary B. Structural Systems 1. Lintel 2. Corbel 3. Arch 4. Cohesive Const. 5. Truss C. Architectural Styles 1. English 2. Georgian 3. Regenry 4. Colonial 5. Garrison 6. Cape Cod 7. Southern Colonial 8. Dutch Col. 9. Fr. Col. 10. Spanish D. Contemporary Architecture 1. Ranch 2. Split Level 3. Modern E. Future Styles
		II. Roof Styles A. Beck Dormer B. Gambrel C. Lean-to D. Gable Valley E. Gable Dormer F. Hip Dormer G. Hip H. Gable I. Mansard J. Hip and Valley

III. Arch Symbols

IV. Design Requirements
  A. Primary Considerations
    1. Plot
    2. Style
    3. No. of rooms
    4. No. of floors
    5. Plan and Shape
    6. Foundation
    7. Roof
    8. Expansion
    9. Zoning
    10. Cost
  B. Preliminary Layout
    1. The program
    2. Orientation
    3. Circulation
    4. Efficiency
    5. Elevations

VI. Architectural Rendering

CREATIVE DESIGN

GRADE 9-12

WEEK	DAY	CONTENT
		I. Design: Description and Purpose A. Design Principles B. Concepts 1. Harmony 2. Discord 3. Proportion 4. Balance 5. Rhythm II. The Design Method A. What is it? B. Definition of terms 1. Problem 2. Creativity 3. Design 4. Problem Solving Methods III. Steps in Design Problem Solving A. Problem Definition B. Preliminary Solution C. Preliminary Solution, Refinement. D. Decision and Implementation IV. Scaled Models V. Prototypes VI. Strengths of Materials A. Stresses and Strains B. Moments 1. Moments and Reaction C. Torsion 1. Torsion Problems VII. Problem Solving A. Identification of Problem B. Solution of Problems 1. Alternative Solution C. Implementation of Design Solutions VIII. Show and Tell A. Student Demonstrations 1. Student Research 2. Selection of a Problem 3. Design - Model 4. Construct Prototype 5. Test Material 6. Test prototype

DRAFTING & DESIGN

GRADES 9-12

WEEK	DAY	CONTENT
		I. Introduction A. Identify Room No. B. Identify Class Section C. Identify Subject Name D. Identify Teacher II. Use of equipment A. Proper use of instruments and to demonstrate their proper use 1. Scales 2. T-Square 3. Set of Instruments 4. Triangles 5. Irregular curve B. Measurement 1. Metric 2. Standard C. Lettering 1. Number Technique 2. Lettering Technique III. Geometric Construction A. Bisected lines and angles B. Construct by use of instrument tangent lines C. Hexagon D. Octagon E. Squares F. Circles G. Ellipses IV. Shape Description A. Sketching 1. Isometric 2. Straight lines 3. Circles 4. Arcs 5. Planes & edges B. View relationships 1. Right angle projection C. Auxiliary Views D. Sections views V. Pictorial Drawing A. Oblique 1. Cavalis 2. Cabinet B. Isometric

BASIC ELECTRICITY

GRADES 9-12

WEEK	DAY	CONTENT
		I. Electricity as a power source. A. History and development of electrical technology 1. Greeks, use of amber as a source of static 2. Ben Franklin harnessing static electricity via the kite. 3. Henry Volta, the discovery of the Volta Pile (chemical battery) 4. Michael Faraday, invention of the mechanical generator 5. Thomas Edison, discovery of the light bulb, organization of the first chemical electrical power system. B. Natural power sources 1. Chemical 2. Solar 3. Hydro (water) 4. Fossil Fuel 5. Rheumatic (wood) 6. Nuclear 7. Geo-Thermal 8. Thermal C. The Nature of electricity 1. Static 2. Direct current 3. Alternating current II. Circuit Theory A. Ohm's Law 1. Current 2. Voltage 3. Resistance, color code, conductors and resistors. B. Watt's Law C. Basic Circuitry 1. Series 2. Parallel 3. Compound D. Schematic drawing and reading 1. Symbols 2. Format E. Problem Solving 1. Automotive systems 2. Domestic electrical systems

III. The uses of magnetism
  A. Nature of magnetism
    1. Attraction and repulsion
    2. Lines of force
  B. Magnetic materials
    1. Magnetic
    2. Non-magnetic
    3. Anti-magnetic
  C. Classification of magnets
    1. Natural
    2. Man Made (Electro & permanent)
  D. Inductance
    1. Natural
    2. Electrically indercal

IV. Electrical Application
  A. Communication
    1. Radio
    2. Television
    3. Sound systems
    4. Mobile radio
    5. Broadcasting
    6. Microwave
    7. Telemetering
    8. Telephone
    9. Teletype
  B. Navigation
    1. Radio
    2. Sonar
    3. Loran
    4. Direction finding
  C. Industrial
    1. Inspection
    2. Regulation
    3. Testing
    4. Counting
    5. Separating
    6. Power
    7. Motors
    8. Controls
    9. Lighting
    10. Monitoring
    11. Cleaning
    12. Ultrasonics
  D. Home
    1. Power
    2. Lighting
    3. Cooking
    4. Appliances
    5. Cleaning
    6. Air conditioning
    7. Heating
  E. Instrumentation
    1. Measurement
    2. Application
    3. Chemistry
    4. Physics
    5. Astronomy

III. The uses of magnetism
  A. Nature of magnetism
    1. Attraction and repulsion
    2. Lines of force
  B. Magnetic materials
    1. Magnetic
    2. Non-magnetic
    3. Anti-magnetic
  C. Classification of magnets
    1. Natural
    2. Man Made (Electro & permanent)
  D. Inductance
    1. Natural
    2. Electrically indercal

IV. Electrical Application
  A. Communication
    1. Radio
    2. Television
    3. Sound systems
    4. Mobile radio
    5. Broadcasting
    6. Microwave
    7. Telemetering
    8. Telephone
    9. Teletype
  B. Navigation
    1. Radio
    2. Sonar
    3. Loran
    4. Direction finding
  C. Industrial
    1. Inspection
    2. Regulation
    3. Testing
    4. Counting
    5. Separating
    6. Power
    7. Motors
    8. Controls
    9. Lighting
    10. Monitoring
    11. Cleaning
    12. Ultrasonics
  D. Home
    1. Power
    2. Lighting
    3. Cooking
    4. Appliances
    5. Cleaning
    6. Air conditioning
    7. Heating
  E. Instrumentation
    1. Measurement
    2. Application
    3. Chemistry
    4. Physics
    5. Astronomy

      6. Radiation
      7. Meteorology
   F. Computers
      1. Digital
      2. Analog
      3. Automation
   G. Medical
      1. Therapy
      2. X-ray
      3. Food preservation
      4. Instrumentation
      5. Microscopy
   H. Hobby
      1. Amateur radio
      2. Radio Control
      3. Citizens band
      4. Hi-Fi sound
      5. Experimentation

V. Radio Waves
   A. Wireless communication
      1. Antenna systems
      2. Transmitters
      3. Oscillation
      4. Cycles
      5. Wave length
   B. The nature of a wave
      1. Audio frequency
      2. Continuous wave
      3. Amplitude modulation A.M.
      4. Frequency modulation F.M.

ENERGY

GRADES 9-12

WEEK	DAY	CONTENT
		I. The Prime Mover of the Universe - The Beginning of Power A. Mans struggle to harness energy 1. Wind 2. Water 3. Animal B. Early conversions of energy and power - Mechanical 1. The liner a. 1st class b. 2nd class c. 3rd class 2. Wheel and Axle 3. The Pulley a. Three types of pulleys 4. The Screw 5. The Inclined Plane and Wedge C. Nature of Available Energy 1. Kinetic 2. Potential Mass-Inertia, Acceleration II. The Energy Man Uses and Natural Power A. Original Energy Sources 1. Sun (solar) 2. Nuclear B. Indirect Energy Sources 1. Wind a. Windmills 2. Water a. Water Wheels b. Hydroelectric 3. Fuels a. Replaceable Fuels 1. Wood b. Fossil Fuels 1. Coal 2. Oil 3. Natural Gas 4. Water Wheels a. Undershot b. Overshot c. Turbine 5. Food a. Calories 6. Geothermal a. Geysers 7. Tidal Power

C. Measuring Energy
  1. Work and Horsepower
  2. Force and Torque
  3. Pressure
  4. Efficency
  5. Cost Effectiveness
  6. Pollution and Implications for Future uses.

III. Conversion of Energy for Mans Development
  A. The Arrival of Steam
    1. Reaction Engines
    2. Atmospheric Engines
    3. Reciprocating Engines
  B. The Steam Turbine
    1. Impulse
    2. Reaction
    3. Velocity - compound
    4. Multi-stage
  C. Electrical Power
    1. Water powered Generators
    2. Wind Powered Generators
    3. Fossil Fuel Generators
    4. Atomic Fuel Generators
    5. Solar Powered Generators
    6. Geothermal Powered Generators
  D. Fluid Power (Transmission of Power)
    1. Hydraulics
    2. Pneumatics
    3. Reservoir, pump, tubing, valves
    4. Compressors
    5. Control
      1. Valves (Types)

IV. National Energy Resources and power systems of the future
  A. Sources of Energy
    1. Oil
    2. Coal
    3. Solar
    4. Atomic
    5. Natural Gas
    6. Tidal
    7. Geothermal
    8. Shale Oil
  B. Implications of the Future
    1. Sources
    2. Pollution/Ecology
    3. Quality
    4. Population
    5. Dependency
      a. Need
      b. Actually needed
    6. Transportation
    7. Cost
  C. Developments in Power Systems
    1. Nuclear and Solar Energy
    2. Tomorrow's Vehicles

MAN THE CREATOR - ART

GRADES 7

WEEK	DAY	CONTENT
		I. Mans Creations A. Historical Reasons 1. Record 2. Communication 3. Worship B. Present Reasons 1. Aesthetic Beauty 2. Communication 3. Functional C. Future Predictions 1. Communication 2. Functional 3. Aesthetic Beauty II. Structural Functions A. Importance of Sturcture 1. Need of structure compared to: a. Home Economics (cooking, sewing) b. Music (songs, instruments) c. Industrial Arts (wood objects, metals) 2. Human Figures a. Human Proportion b. Gesture c. Contour d. Details 3. Architecture a. Basic theory b. Perspective 1. 1 point 2. 2 point a. Space 3. Serial III. Color Development A. Theory 1. Color Wheel 2. Color Combinations B. Functions 1. Optical Illusions 2. Design a. Rhythm b. Composition 1. Balance 2. Contrast

IV. Developments in Art
    A. Past, present and future
        1. Influence on Man: The Creator
            a. Environmental
            b. Existing Media
            c. Existing Thoughts
        2. Means of Communicating Thoughts
            a. Visual
            b. Symbolic

MAN THE CREATOR - ART

GRADE 8

WEEK	DAY	CONTENT
		I. Process and Theory A. Two dimensional 1. Pen and Ink a. Limited medium by itself b. Unlimited when combined with other media 2. Printing a. Unlimited medium b. Types 1. Raised 2. Mimeo 3. Screen 4. Lithography 5. Etching 3. Painting and Drawing a. Discuss various mediums b. Practical experience 1. Water color a. Wet on wet b. Dry brush c. Combined 2. Pastel drawings a. Combined colors b. Shading B. Three Dimensional 1. Theory 2. Functional a. Aesthetic beauty b. Useful Purpose 3. Sculpture a. Discussion of media used b. Paper Mache II. Begin unit in Crafts with Industrial Arts

MAN THE EXPRESSOR - MUSIC

GRADE 7

WEEK	DAY	CONTENT

MAN THE EXPRESSOR - MUSIC		
GRADE 8		
WEEK	DAY	CONTENT

MAN THE MAKER - INDUSTRIAL ARTS

GRADE 7

WEEK	DAY	CONTENT
		I. Ways of Communicating A. Gestures and Signals B. Pictures and Symbols C. Language and Writing D. Mass 1. Newspaper 2. Motion Picture 3. Television 4. Radio E. Interpersonal 1. Telephone 2. Telegraph II. Why Man Needs to Communicate A. Keep up with daily activities B. Fulfill Human Needs C. Institutions 1. Government 2. Education 3. Religion 4. Family 5. Business III. Importance of effective and accurate Communications A. Daily Life B. Social Institutions IV. Communication Processes and Systems A. Man to Man B. Man to Machine C. Machine to Machine D. Machine to Man V. Theories of Communication Processes A. Encoding B. Transmitting C. Receiving D. Decoding E. Storage F. Retreival VI. Effects and Implications of Communications Systems A. Information B. Persuasion

C. Values/Standards
D. Attitudes
E. Quality
F. Social Change
G. Influences

MAN THE MAKER - INDUSTRIAL ARTS

GRADE 7

WEEK	DAY	CONTENT
		I. Definition of Industry A. Essential 1. Natural Resources 2. Human Resources 3. Capital Resources 4. Mass Production II. Main Concepts of Mass Production A. Interchange ability of parts B. Automation C. Specialized Labor D. Elimination of Wasted Effort and Motion E. Social Consequences of Mass Production for Mass Consumption 1. Job Motivation 2. Product development a. Quality b. Disposable 3. Leisure Pursuits 4. Training 5. Employment III. Elements of Industry A. Research and Development B. Production Tooling C. Production Control D. Quality Control E. Personnel Management F. Manufacturing G. Marketing

MAN THE MAKER - INDUSTRIAL ARTS

GRADE 8

WEEK	DAY	CONTENT
		I. Definition of Transportation A. Objective B. Purpose II. Types of Transportation Methods A. Terrestrial B. Marine C. Air D. Space III. Development of Transportation Methods A. Early Methods B. Development of Wheel C. Development of Steam D. Development of Internal Combustion Engine E. Development of Turbine, Wankel IV. Transportation Systems A. Personal B. Mass C. Industrial D. Services V. Aids to Transportation A. Bridges and Tunnels B. Roads C. Maps D. Signs and Signals E. Airports G. Radar H. Depth Finders I. Locks VI. Problems of Transportation A. Climate and Weather B. Cost C. Distance and Geography D. Environmental Factors and Considerations E. Fuel VII. Future Development in Methods and Systems of Transportation A. Personal Jet Motors B. Transportation of Information through Communications C. Pressurized Tubes D. People Movers in Large Cities

MAN THE MAKER - INDUSTRIAL ARTS

GRADE 8

WEEK	DAY	CONTENT
		Art and Industrial Arts students rotate between classes over a four week period. I. Study of Stained Glass (Art) A. Historical Sketch 1. Use 2. Material 3. Methods of Composition 4. Present Uses B. Design Element 1. Color 2. Line 3. Techniques 4. Dimensions I. Introduction to Craft Industries (I.A.) A. Pottery B. Leather C. Weaving D. Folk Toys E. Model Making F. Sculpture II. Development of Nail Sculpturing A. Uses B. Material C. Design D. Technique II. Candle Making (Art) A. Historical Sketch 1. Development 2. Period of Uses 3. Revival B. Methods 1. Dipped 2. Molded C. Materials 1. Composition 2. Substances 3. Technique II. Stained Glass Construction (I.A.) A. Layout of Glass B. Cutting C. Construction D. Finishing

III. Introduction to Indian Pottery (Art)
   - A. Historical Sketch
   - B. Methods
   - C. Materials
   - D. Interpretation of Markings

IV. Junk Recycling
   - A. Why?
   - B. What?
      1. Glass
      2. Newspaper
      3. Metal
   - C. Construct Projects using recyclable materials

IV. House Plant Unit (Art)
   - A. Type
      1. Flowering
      2. Foliage
   - B. Plant Care
      1. Warmth
      2. Light
      3. Air
      4. Water
      5. Food
      6. Cleaning and polishing
      7. Transplants
   - C. Increasing Your Stock
      1. Methods of Rooting
      2. Potting

IV. West Virginia Folk Toys (I.A.)
   - A. Historical Sketch
   - B. Types of Toys
   - C. Methods of Construction
      1. Materials
      2. Processes
      3. Finishes

V. Weaving

MASS MEDIA COMMUNICATIONS

GRADE 9 -12

WEEK	DAY	CONTENT
		I. Mans Need to Communicate Effectively *Instantly* to the Masses - The Mass Media A. Definitions B. Characteristics of Mass Media II. Foundational Theories of the Mass Media in America A. Rise of Democracy 1. Freedom of Speech 2. Right to Vote B. Universal Free Education 1. Rational Decision Makers 2. Illiteracy C. Industrial and Technological Revolution D. Urbanization 1. Cities Development 2. Immigration 3. Theory of Motion 4. Invention was created, developed and ready for marketing after WWII 5. Feuds Ceased E. Societal Effects 1. Status of Television 2. Erection of Antennaes 3. Lower Costs 4. Better Programming 5. People choosing alternative forms G. Future Developments III. Mass Press in America A. Production of Multiple Copies 1. Far East Influence 2. Gutenberg a. Movable Type b. Mazarin Bible 3. Colonial Press a. Higher Class b. Mercantile and Business News (Reports) B. First Mass Press 1. Benjamin's Day's "Sun" a. Sensationalizing b. Penny Press c. Advertising d. Street Sales 1. First Newsboys e. Literary and Entertainment for Common Man

- C. Industrial Revolution
    - 1. Inventions and Innovations
        - a. Koenigs Press
        - b. Fourdinier Press
        - c. Telegraph
        - d. Use of Steam Power
            - 1. Railroads
            - 2. Steamboats
- D. Civil War
- E. Era of Yellow Journalism
    - 1. Charles Dana
    - 2. Joseph Pulitzer
    - 3. Randolph Hearst
    - 4. Development of a Code of Ethics
- F. Diffusion and Adoption of Mass Press
    - 1. Reasons for Popularity
    - 2. Reason for Decline
    - 3. Effects and use of advertising and acceptance.

V. The Second Mass Medium - Motion Pictures

- A. Development of Motion Pictures
    - 1. Camera Obscura
        - a. Magic Lantern
    - 2. Theory of Perception of Motion
        - a. Joseph Plateau
        - b. Emil DeRaymond
        - c. E. J. Marey
        - d. Edward Muybridge
- B. Recording Still Images
    - 1. Joseph Nucephore Niepce
    - 2. Louis Jacques Daguerre
    - 3. George Eastman
        - a. Flexible Film
        - b. Kodak Camera (for common man)
- C. Recording and Projecting Images
    - 1. Marey and Muybridge early work
    - 2. Thomas Edison and W.K.L. Dickson's Kinetoscope
        - a. Carbutts and Eastman's Film
        - b. Black Maria
        - c. Kinetography
        - d. Kinetoscope
- D. Edisons Kinetoscope Parlors
    - 1. Peep Shows
        - a. Financial Structure Established
        - b. Content
    - 2. Nickelodeans
        - a. Immigrants
        - b. Illiteracy
        - c. Entertainment from a hard city life

- E. Modern Motion Picture Development
  - 1. Film Length
  - 2. "Star" System
  - 3. Stylish Movie House
    - a. Family Entertainment
  - 4. Code of Ethics
- F. Diffusion and Acceptance in America
  - 1. Rise in popularity
    - a. Development of Common Man
    - b. Entertainment
    - c. Idols
  - 2. Reason for Decline
  - 3. Financial Structure

V. Instantaneous Mass Communications - Electronics Era

- A. Development of Radio
  - 1. James Maxwell
    - a. Electromagnetic Waves
  - 2. Heinrich Hertz
    - a. Hertzian Waves
  - 3. Guglielmo Marconi
    - a. Perfection and development of radio
    - b. Development of American Marconi Company
- B. Early Interest and Related Developments in Radio by Public
  - 1. Crystal Radio Sets
  - 2. Complications
    - a. Nurse Code Interpretation
  - 3. Speech Broadcasted over wireless-invention of speaker/microphone
  - 4. Audion Tube (DeForest)
- C. Modern Radio Production and Radio Programming
  - 1. David Sarnoff (1916)
    - a. Famous Memo
      - 1. Radio Music Box
  - 2. Dr. Frank Conrad
    - a. First Disc Jockey
    - b. KDKA - First Radio Station
    - c. Sales Campaigns of Radios
      - 1. Early Financial Base
  - 3. Financial Basis for Radio Established
    - a. American Society of Composers Authors and Publishers
    - b. Advertising
      - 1. Public Outcry
  - 4. War between newspaper and radio stations over news wires
    - a. Government Interference
    - b. People wanted news - instantly
    - c. Formation of FCC

D. Diffusion and Adoption Patterns of Radio
  1. Acceptance
    a. Orson Wells "War of the World"
    b. Depression
  2. Reason for Decline
  3. Number of units in present household

VI. The Rise of Television
  A. Theory of Television
  B. Earliest Attempts
    1. Brown
    2. Jenkins
  C. First Station
    1. WGY - Schnectady - 1927
    2. Programming
    3. Local Acting
    4. Developments of National Networks
    5. World War II
  D. Diffusion and Acceptance of Television after WW II
    1. Most of the characteristics of the Mass Media were already accepted in our society
      a. Financial Structure

MAN THE PROVIDER - HOME ECONOMICS

GRADE 7

WEEK	DAY	CONTENT
		I. Getting Acquainted A. Relationships 1. The World we live in a. Teen-age environment b. Roles of the teen-ager 2. Teen-agers today a. Family Relations b. Self-concept B. Family Living 1. How families differ 2. Changes in families 3. Requirements of family living a. Cooperation b. Communication c. Confidence d. Concern e. Commitment f. Companionship g. Consideration C. Self 1. Self-concept a. What is a teen-ager? b. Basic Needs c. Individual differences d. Steps to maturity 2. Your image a. Importance of communication b. Manners and Mannerisms 1. Breaking bad habits 2. Be natural 3. Image impact a. Opportunities b. Setting goals c. Friends d. Social growth e. Vocational growth II. - Getting Along with Others A. Using the home for family living B. The home meets mental and emotional needs 1. Role of parents 2. Role of brothers and sisters 3. Older family members and relatives 4. Family sharing

- C. Understanding babies and children
  - 1. Pattern of growth
  - 2. Special needs of children
  - 3. Responsibility for children
    - a. Health
    - b. Food
    - c. Happiness
- D. Family living problems
  - 1. Management of problems and problem solving
  - 2. Result of good management
    - a. Comfort
    - b. Convenience
    - c. Efficiency
    - d. Health and Safety
  - 3. Management of the home
    - a. Organizing
    - b. Daily care
    - c. Weekly and monthly care
    - d. Seasonal planning
    - e. Outdoor improvements

III. Meals, Food, and Dietetics
- A. Foods needed for health and vitality
  - 1. Guide to nutrition
    - a. Effects of nutrition on health
    - b. Calories and nutrients
    - c. Water
    - d. Nutrition impact
- B. Purchasing Food
  - 1. Economy and convenience, and difference in food costs
  - 2. Consumer information and protection
    - a. Shopping
    - b. Buying
- C. Managing meals
  - 1. Becoming familiar with the kitchen
  - 2. Planning interesting meals
  - 3. Mechanics of food preparation

IV. Food Preparation
- A. Preparing protein foods
  - 1. Principles of protein cookery
    - a. Meat
    - b. Fish
    - c. Poultry
    - d. Eggs
  - 2. Preparation of milk and milk-rich foods
    - a. Place of milk in the menu
    - b. Use of milk and milk products
    - c. Cheese in the menu
      - 1. Making cheese
      - 2. Special care in cheese cookery
      - 3. Types of cheese

B. Preparing fruits and vegetables
   1. Available fruits and vegetables
   2. Principles of cooking fruits and vegetables
   3. Principles of preserving fruits and vegetables
   4. Principles for serving raw fruits and vegetables

C. Preparing cereal products
   1. Types of cereal foods
   2. Principles of cereal cookery

D. Preparing energy foods
   1. Types of energy foods
   2. Cooking energy foods

E. Enjoying the prepared meal
   1. Setting the table and choosing the tableware
      a. Table manners
      b. Meal service
      c. Cleaning after the meal
   2. Dining with friends

V. Basic Sewing

A. Planning sewing projects
   1. Match projects to ability

B. Sharing clothing construction equipment
   1. Sewing equipment
      a. Safety of operation
      b. Types and selection of sewing equipment
   2. Choosing a project
      a. Obtain pattern
      b. Estimate Material Needed
      c. Select Fabric
   3. Learn to use the sewing machines
      a. Work safety

C. Creating clothes to wear and enjoy
   1. Select pattern
   2. Obtain fabric to suit the pattern
   3. Prepare for sewing
   4. Assemble the garment

MAN THE PROVIDER - HOME ECONOMICS

GRADE 8

WEEK	DAY	CONTENT
		I. Clothing and Grooming
		A. Choosing clothes for your activities
		1. Planning the clothing
		a. Choose clothes for attractiveness
		b. Choosing clothes for appropriatness
		c. Choosing clothes for wearability
		d. Choosing clothes for enjoyment
		B. Buying clothes for use and fashion
		1. Consumer protection
		a. Labels on garments
		b. Washing instructions
		2. Making quality judgments
		a. Buying outerwear
		b. Buying undergarments
		c. Buying accessories
		C. Maintaining clothes for attractiveness
		1. Daily Care
		2. Weekly Care
		3. Seasonal Care
		II. Care of Home
		A. Household tasks
		1. Cleaning
		2. Maintain equipment
		3. Scheduling household tasks
		B. Inspection for repairs
		1. Roof
		2. Electrical
		3. Water and piping
		4. Termites
		C. Efficient use of time
		1. Assign priorities in home care
		2. Plan best way to do household tasks
		D. Outdoor improvements
		1. Yard
		2. Trees and shrubs
		3. Walks and planters
		a. Flower beds
		b. Family gardens
		E. Future planning
		III. Safety and Emergencies
		A. Safety in the kitchen
		1. Cooking with hot grease and oil
		2. Electrical kitchen accessories
		3. Sharp knives
		4. Handling glassware

- B. Safety in home maintenance
    - 1. Step-ladders
    - 2. Power mowers
    - 3. Insecticides, weed-killers, and fertilizers
- C. Broken glass and handling
    - 1. Disposal of broken glass
        - a. Picking-up and handling
        - b. Disposal
    - 2. Getting rid of bottles and jars
        - a. Recycling of glass
        - b. Old burnt out light bulbs and fluorescent tubes
- D. Fires
    - 1. Prior planning
    - 2. Household fire extinguishers
    - 3. Fire department telephone
- E. Medicines
    - 1. Keep from children
    - 2. Destroy old medicines
- F. Poisonous household materials
    - 1. Emergency remedies
    - 2. Emergency ambulance service
        - a. What can be done
        - b. Telephone number and how to call
- G. Miscellaneous
    - 1. Heart Attacks
    - 2. Snake bites
    - 3. Insect bites

IV. Budget and Money

- A. Managing your resources
    - 1. Kinds of resources
    - 2. Use of resources
    - 3. Benefits of good management
- B. Using your time, energy and money
    - 1. Attitudes about time
    - 2. Managing your time
        - a. Schedule activities
        - b. Assign priorities to spare time
    - 3. Energy
        - a. Attitudes
        - b. Management
    - 4. Money
        - a. Attitudes
        - b. Management
- C. Making consumer decisions
    - 1. Spending money
    - 2. Consumer responsibilities
    - 3. Consumer protection
    - 4. Buying
        - a. Types of buying
        - b. Where to buy
        - c. What to buy
    - 5. Paying the bills
- D. Business and the consumer interaction

TRANSPORTATION

GRADE 9-12

WEEK	DAY	CONTENT
		I. Pre Industrial Revolution Types of Transportation Systems A. Land 1. Foot 2. Animal and Wagon 3. Combination of simple machines with human, animal, or indirect power. B. Sea 1. Ship (power by rowing-sail) 2. Small boats a. Hollowed out tires b. Rafts c. Canoes C. Air 1. Hot Air Balloon 2. Pipe Dreams D. Horsepower produced and its relationship for travel II. Industrial Revolution Transportation Systems A. Land 1. Steam Locomotive 2. Cugnut Carriage 3. Steam Automobiles 4. Electric Autos 5. Development of I.C.E. a. Two Stroke b. Four Stroke B. Sea 1. Steam boats 2. Iron Clad Ships 3. Turbine powered a. Steam 4. Submarines a. Merrimac and Monitor C. Air 1. Airplanes a. Early attempts b. Wright's first flight D. Horsepower produced and its relationship for travel 1. Implications for land/sea/air travel a. Urban rise - decline and development of suburbs. b. Beginning of global transportation system c. Pollution/ecology/environment

III. Present and Future Systems of Transportation
A. Land
1. Diesel
2. Gas Turbine Engine
3. Electric
B. Sea
1. Nuclear
C. Air
1. Jet Engines
2. Rocket Turbine Engines
D. Relationships of man and his ability to transport - implications
E. Future Research and Development

IV. Types of Transportations Systems Today
A. Personal
B. Rural
C. Urban
D. Mass Transit
1. Problems
2. Advantages
3. Disadvantages

V. Indepth Study of Internal Combustion Engine (Small gasoline types)
A. Safety
1. Safety Considerations
a. Gasoline
b. Carbon Monoxide
c. Basic Handtools
d. Machines
e. Engines
B. Construction and Operation of I.C.E.
1. Basic Engine Parts
2. Types and differences of I.C.E.
3. Operation of two stroke of I.C.E.
4. Operation of four stroke I.C.E.
5. Fuel Systems
6. Lubrication
7. Cooling Systems
8. Ignition Systems
9. Routine Maintenance
10. Trouble shooting

VISUAL COMMUNICATIONS

GRADE 9-12

WEEK	DAY	CONTENT
		I. Mans Desire to Communicate A. Knowledge and Ideas 1. Inform 2. Influence B. Develop and maintain social institutions 1. Government 2. Family 3. Economic systems 4. Religion 5. Education C. Communication Systems 1. Man to man, interpersonal 2. Man to machine 3. Machine to man 4. Machine to machine D. Thoery of Communication Process 1. Encoding 2. Transmitting 3. Receiving 4. Decoding 5. Storing 6. Retrieval II. Development of Communication of Processes and Systems A. Mans Early Attempts 1. Gestures 2. Symbols B. Alphabet and Language 1. Development of Community Living 2. Written communication: Cave Drawings, hieoglyphics, clay tablets, pottery and papyrus 3. Phoenicians, meaning of letters. 4. Greeks and Roman Influence C. Development of Present Media 1. Monks, wealthy, and religious sects, providing by writing, information but not sharing with common man 2. Eastern developments: a. Modern Day Paper b. Manufacturing of Ink c. First Mass Produced Books d. Wood block carvings 3. Western Developments a. Gutenberg's Invention of Movable Type b. Development of Printing Processes 1. Letter press

        a. Flatbed
        b. Rotary
        c. Cylinder
    2. Lithography
        a. Stone
        b. Offset
    3. Gravure
        a. Roto

C. Developments in Instant Communications
    1. Smoke, fire, drum, flags, light Beacons
    2. Claude Chapper System
    3. Telegraph
        a. Morse Code
    4. Radio
    5. Television
        a. Picture Phone
        b. Cable
            1. Optics
            2. Facsimile
            3. Video Cassettes
        c. Satellite
            1. Telephone
            2. Television
        d. Computer Development and Relationships

D. Implications and Questions of Past Developments Upon Man and Society
    1. Effects on Societal Development due to each invention or innovation
    2. Creation of middle class values and standards
    3. Creation of the intellectual man
        a. Information
        b. Public Education
    4. Work and Leisurely Pursuits
        a. Careers
        b. Entertainment
        c. Education
    5. Diffusion and adoption patterns of invention and innovation through society

Possible

E. Future Developments in Communication Process and Systems
    1. Establishment of Global Instant/ Interpersonal Communication System
    2. Development of a World Brain
    3. Community Services
        a. Teleshopping
        b. Health Services
        c. Monitoring of Home
        d. Education
            1. Home Instruction
            2. Video Cassettes
            3. Study Foreign Cultures
    4. Holography
    5. Liquid Crystals

III. Image Assembly
    A. Message Analysis
        1. Need
        2. Receivers
        3. Age
    B. Design Principles
        1. Contrast
        2. Balance
        3. Discord
        4. Rhythm
        5. Proportion
    C. Layout
    D. Composition
        1. Background
        2. Tonal Balance
        3. Proportion
        4. Position